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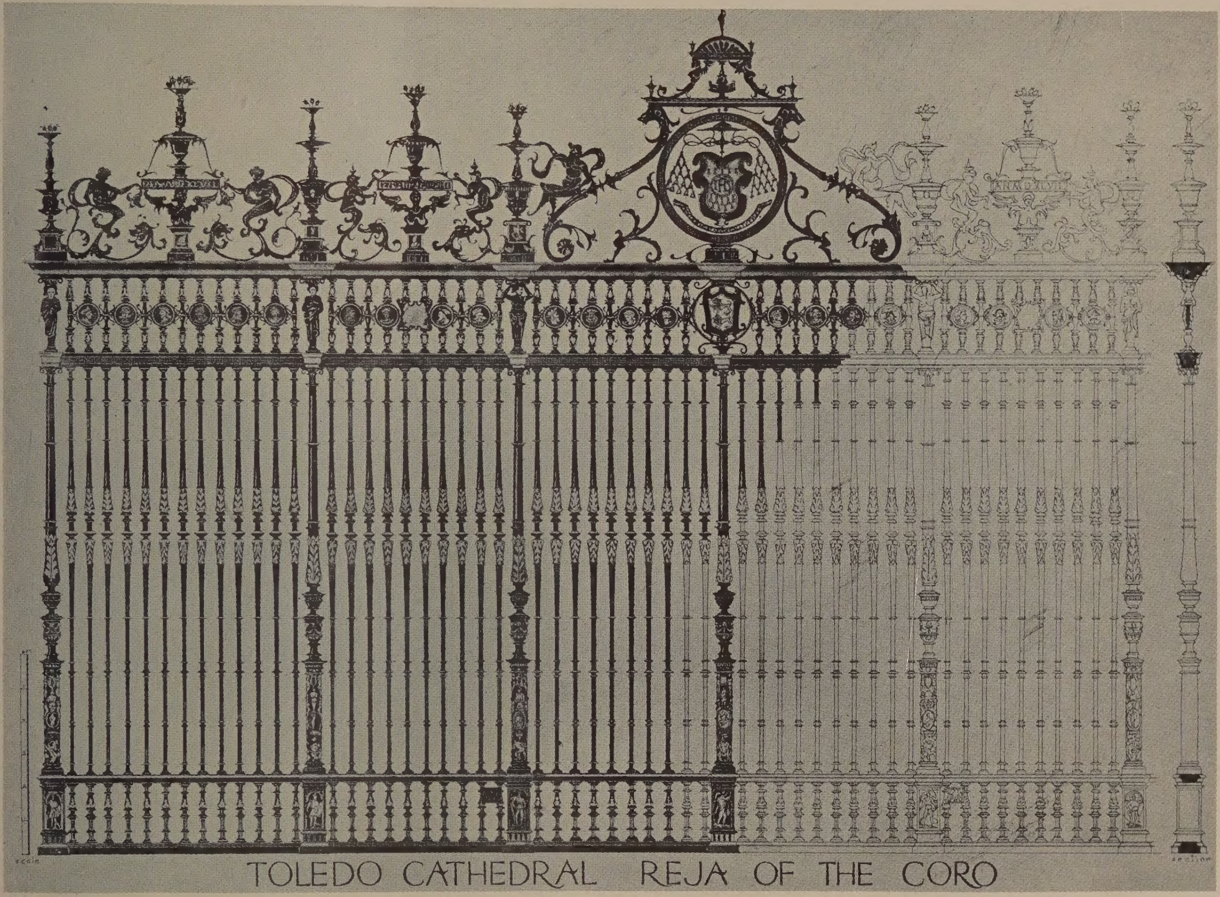

PLATE I. DETAIL, REJA OF THE CORO, TOLEDO CATHEDRAL.

V. Rejeria of the Spanish Renaissance

The Toledo and Palencia Cathedrals

THE Reja of the Coro, Toledo Cathedral, is the finest example in Spain that clearly manifests that its maker was conversant with the allied crafts that went to the building of Renaissance Rejas. He was "El Maestre Domingo," generally called Domingo de Céspedes, born near Toledo. He had already made a number of remarkable screens for Toledo Cathedral when the chapter announced in 1540 that those for the altar, mayor and coro would be competed for. Alonzo de Covarrubias, Architect of the splendid Renaissance Archiepiscopal Palace at Alcalá de Henares, was professional adviser to the chapter, who chose Domingo's design for the coro and Francesco de Villalpando's for the altar. It is on record that the former made a complete model in wood before being finally commissioned to start the work.

Domingo indulged in only one deviation from strict Renaissance precepts—the placing of a colonnette directly in the middle of the composition, thus creating an even number of bays. Otherwise architectural conventionality

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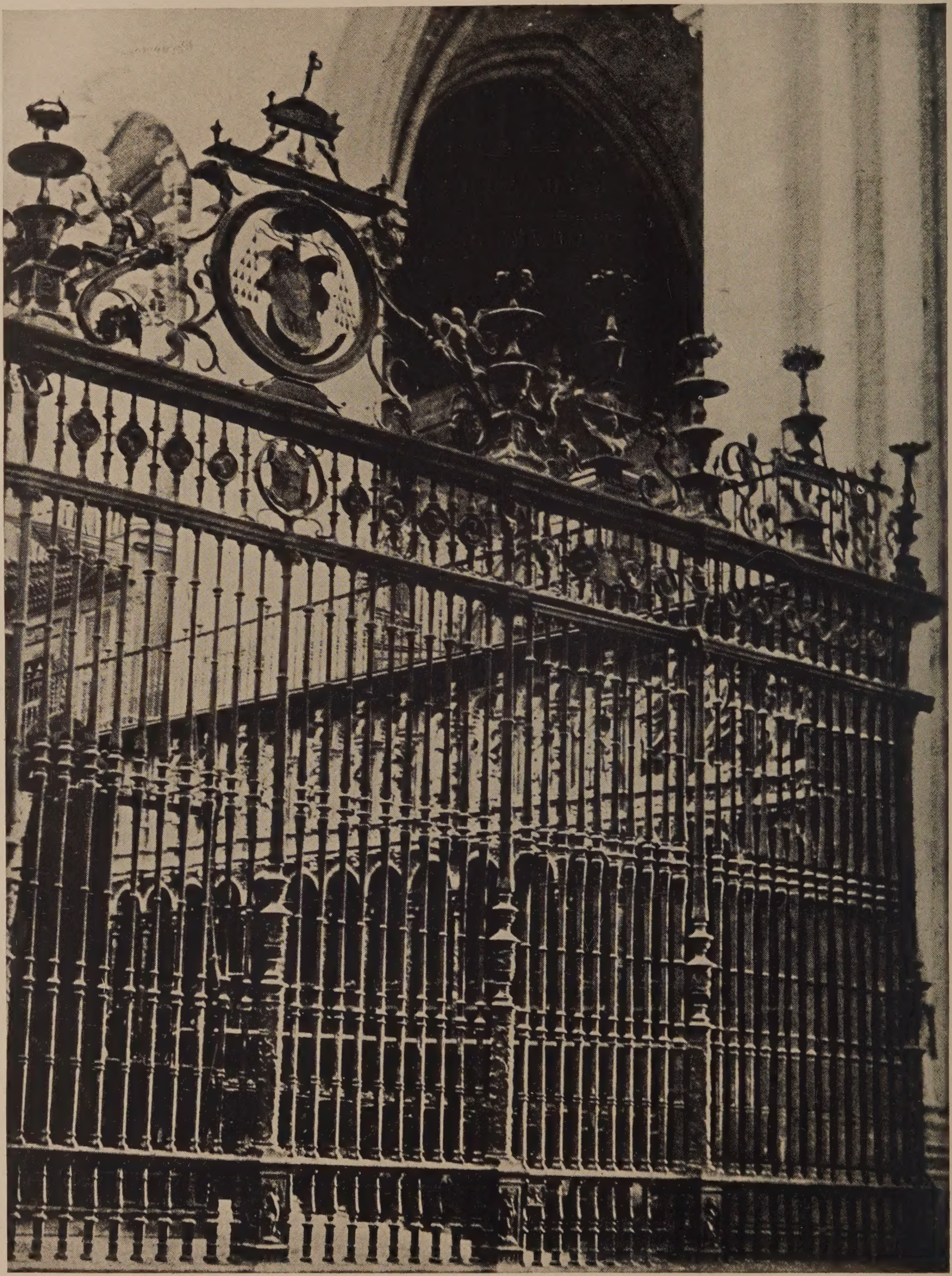

PLATE II. REJA OF THE CORO, TOLEDO CATHEDRAL.

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prevails, somewhat to the sacrifice of spontaneity, yet with none of the stiffness and artificiality seen in some of the later ironwork of the period. The composition is built up in purely orthodox manner—base or pedestal, columns, entablature, cresting. No ornamental horizontal bands are introduced to dispute the effectiveness of the frieze or to diminish the height of the uprights. For these last the spindled baluster only is used, though the same smith had preferred twisted bars in the screens of the baptistry and the chapel of the Holy Ghost made shortly before. Candelabra, heraldic ornament and foliation are kept subservient to structure in true architectural spirit.

Of the more original features one is the placing of the doors, which, instead of occupying the central two bays and forming the usual double entrance, are placed singly in the second and fifth bays; another is the encircling of the central motif formed of the Cardinal's escutcheon by a solid rim, a most difficult detail to execute. The colonnettes are also solid instead of having wooden cores. This entire work was originally silvered—for silver at that moment was pouring into Spain from the New World—and must have presented a novel appearance after the gilded and painted work previously done. But when Napoleon's plundering troops were reported approaching the city, the silvering was hidden under a coat of black plain which has never since been removed. Even in this sable garb the beauty of the design and proportion is striking; and the sombre coro Reja, though only twenty-five feet high, holds its own well with the many brilliant examples which this great church boasts.

Some writers give Gaspar Rodriguez of Segovia, others Francesco de Villalpando of Valladolid, as the author of the Reja of the Coro Palencia Cathedral. Confusion also exists as to the date, 1522, 1555 and 1561 being variously given. The first mentioned, 1522, may be read twice on the marble base of the Reja and should be definitive; but the rest of the Latin inscription—"Adrian VI being Pope and Charles V being Emperor of the Romans and King of Spain, first of this name"—is disturbing, for Charles was not crowned Holy Roman Emperor until 1530. Furthermore, any one who has studied Reja development would be inclined to reject the first date, for the reason that not a trace of Gothic, such as may be observed in contemporary work, is to be seen here. It is pure Renaissance, free and knowing in composition, and decidedly later than the Reja of the capilla mayor at Toledo made by Villalpando between 1541 and 1548. If one accepts him as maker of both, he must have gone to Palencia after finishing his commission at Toledo.

In general composition the Palencia example is unquestionably superior. A new feature to be observed here is the admirable way it is tied in architecturally with its surroundings by means of a marble parapet; this goes far towards making the great piece of ironwork seem like an integral part of the edifice.

A condition imposed on the Palencian rejeros, both for capilla mayor and coro, was that the arms of the prelate who donated them should be incorporated as a decorative motif; this in the present instance, along with the figures of the four evangelists with their emblems, makes for great richness. The crowning figures are of solid bronze, and the entire Reja is gilt and painted. The total height is nearly thirty feet; the width, thirty feet and six inches to the centers of the end colonnettes.

Tie-Rods and Wall-Anchors for Buildings on Weak Foundations

IN London and many other towns built on alluvial soil, it is no uncommon thing to find old buildings whose bulging walls have been saved from collapse by means of wrought iron tie-rods judiciously inserted at the upper floor levels, says the London Engineering Journal. Frequently this method of securing dilapidated walls is not only expeditious, but economical, whilst many buildings, otherwise unsafe, have their useful term of life greatly prolonged.

The tie-rods, generally ¾-in. or 1-in. diameter, screwed at each end, are inserted at right angles to the bulging or overhanging wall. They are placed for preference under piers, and not under or over window openings, a good position being some eighteen inches or so from the quoin angles, if the building is detached. Where the floor joists run parallel to the rods, there is no difficulty in getting the latter through, the walls being simply pierced where necessary by means of the bricklayers' chisel. Where the rods have to cross floor joists, the latter should be notched as slightly as possible, and, preferably, near to the supports, so that they may not be weakened more than is absolutely necessary. When inserted, the rods will then be almost in contact with the under side of the floorboards. At each end of the tie-rod, as near as may be to the bulged or overhanging part of the wall, a bearing-plate or "wall-anchor" must be placed.

The forms usually met with in the London district are either:—(1) A circular cast iron plate from 9-in. to 12-in. diameter, and about 1½-in. thick at centre. (2) Two wrought iron bars about 2-in. by ⅜-in. or 3-in. by ½-in., placed in the form of a St. Andrew's Cross; or (3) A wrought iron bar of similar dimensions, forged into the shape of the letter S, to indicate, as once suggested by an unprofessional friend, that the building so treated is "safe." Whichever form is selected, a hole is prepared at its centre of figure, through which the screwed end of the tie-rod is passed, and a square nut enables the plate to be closely clamped to the wall. Usually the plate is not bedded on mortar; but it is suggested that, after tightening up, a neat pointing of Portland cement between the plate and the brickwork would not only insure more perfect contact and bearing, but would also help to prevent corrosion of the ironwork where it cannot be got at for repainting. The objection urged against the method here described is that these plates disfigure any building to which they are applied, and it is generally understood that they detract from the market value of property which exhibits them; not merely because of the impaired appearance (many of these buildings never were noted for their appearance); but on account of the indication that the main walls have settled, and therefore, presumably, may be liable to further movement.

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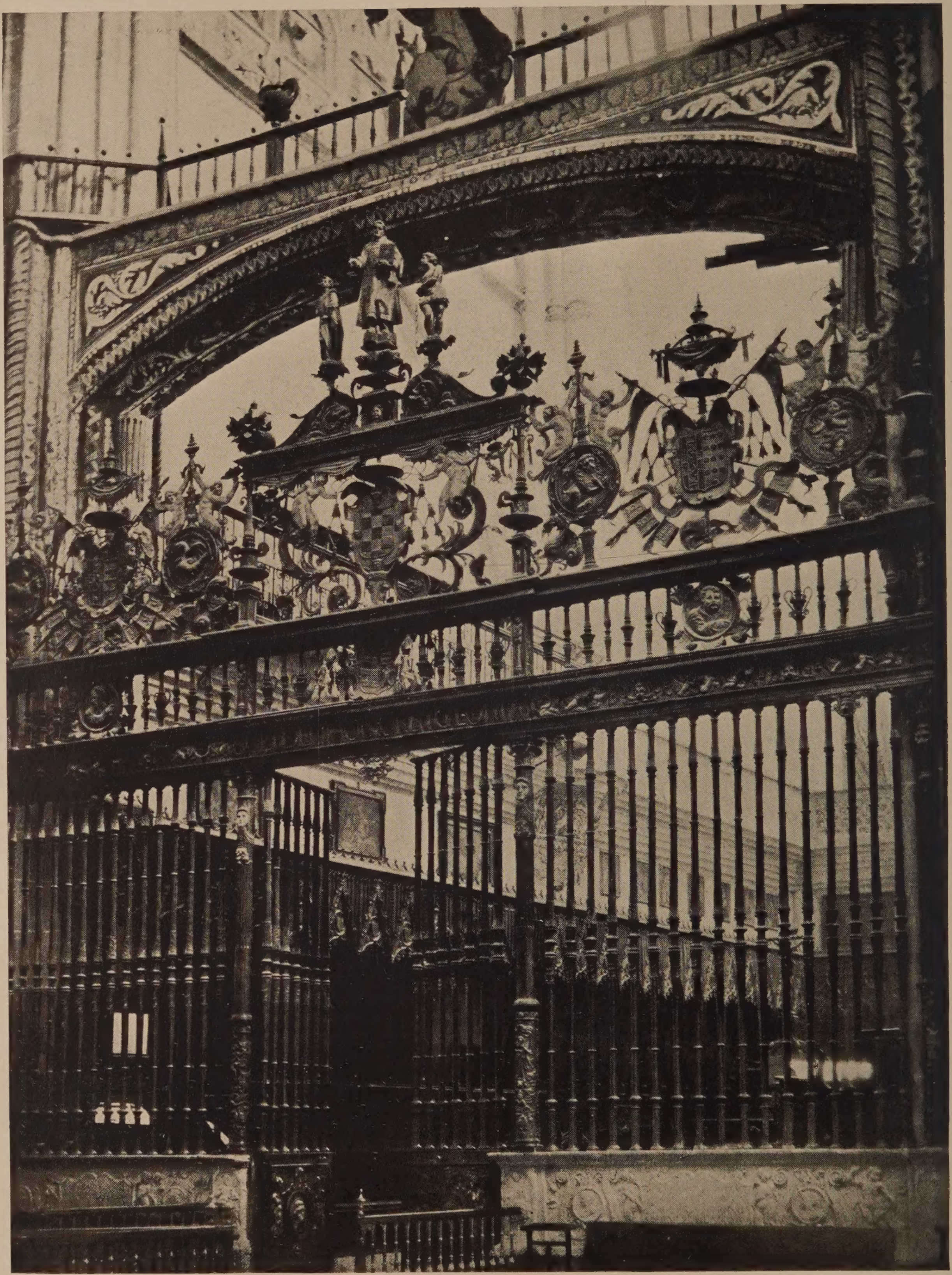


PLATE III. REJA OF THE CORO, PALENCIA CATHEDRAL.

(*Continued from page 267*)

It must be admitted that the design of these plates leaves much to be desired from both the scientific and the artistic standpoints. Taking the common type of cast iron plate, which exhibits a nauseating repetition of most commonplace design, its chief structural fault is that it has far too little grip on the brickwork. In the worst case, a 9-in. plate will not more than cover three courses of bricks, including two stretchers and two headers, the centre header being cut away for the tie-rod. (Fig. 4.) This gives a perimeter of 2-ft. 3-in. only, upon which frictional resistance to slipping through of the bricks can be expected; for in bad brickwork the perpend joints are often nearly devoid of mortar. Owing to the fact that in ordinary bonding these joints generally run directly through the wall, whatever its thickness may be, it will be seen that the block of brickwork grasped by the plate might be pulled inwards, without giving much support to the surrounding work. This is especially liable to happen in old and dilapidated walls, where the mortar, originally of poor quality, has largely perished through age and weathering. The same fault is observable in the larger cast iron plates, which never grip more than four or five courses of bricks. The only departure one recalls from the ordinary circular casting is a five-lobed design, somewhat resembling a stiffly conventional Tudor rose with angular petals; but only five courses of bricks were grasped.

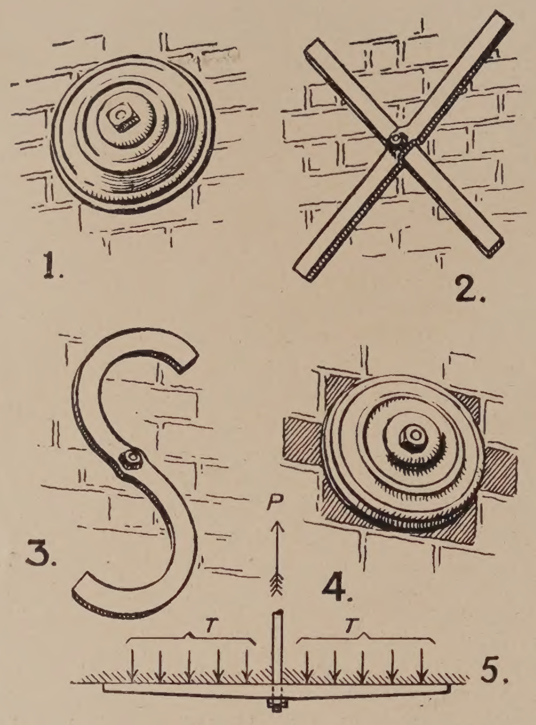
Turning now to wrought iron specimens, it will be seen that if they are assumed to bear evenly upon the face of the wall, the pull of the tie-rod when screwed up will throw them into a state of stress similar to that of a double cantilever (see Fig. 5), which is exemplified in the case of a concrete foundation supporting a column or stanchion; except that in lieu of the vertical pressure of the column, we have the horizontal pull, P, of the tie, whilst the vertical reaction of the earth is replaced by the horizontal outward thrust T, of the wall, the pull and outward thrust being equal and opposite. An elementary knowledge of Mechanics will enable us correctly to design such a beam. An economical and efficient design will be deeper than it is broad, and from a maximum depth at the centre of its length, it will taper towards each end. Its depth will be at right angles to the face of the wall. Comparing theoretical considerations with the examples provided by our modern smiths, we usually find all first principles ignored. The bar is placed flat against the wall instead of edgewise, thus giving the minimum resistance to bending, and allowing its extremities to spring away from their work. The bar is usually of the same width and thickness throughout—a wasteful misuse of metal, which also gives the bar a clumsy and unfinished appearance. Moreover, just where the greatest bending stress occurs, the bar is weakened by unskilful forging, or by the total omission of forging around the hole required for the tie-rod. The utter lack of artistic merit exhibited by these wall plates is as much due to the radically defective design just described, as it is to an entire want of finish, and an absence of the least attempt to refine or ennoble their form by any of that enrichment to which wrought iron lends itself so kindly under the hand of the sympathetic workman.

At this point it is refreshing to turn from these crude productions of our modern rolling-mills and smiths, to the admirable examples which meet one on every side in Flanders. A brief consideration of a few typical specimens will soon convince one of the keen scientific insight, as well as of the masterly artistic ability with which they were lovingly fashioned. Even the apparently superfluous scroll work is made to serve a constructive purpose by giving the anchor an increased grasp of wall surface. However modest the forging, one invariably finds it has a good grasp of the brickwork. It is generally not less than 3-ft. long, embracing 12 or more courses of bricks. Square in section, or deeper in the direction of the bending stress (as in Figs. 6 and 8), it is gently tapered off towards the ends with a refinement rivaling that of the entasis of a column. Nor is the craftsman content with this. He does not leave his work until he has embellished it with some little scroll or twist—perhaps a neat application of a simple moulding, or even a few chisel marks struck decoratively. In fact, the builder was not ashamed of these ties and their adjuncts; rather did he delight in demonstrating that his building was well knit together.

On the treacherous soil of the Netherlands, where piled foundations were often a necessity, it became highly desirable to so construct the building that, in the event of settlement, the lofty walls should be in no danger of falling. Hence we find that at every floor level, and often through gabled roofs as well, iron tie-rods were inserted when the building was erected, and the wall anchors were eagerly seized upon as opportunities for the display of ornament. A first visit to Belgium or Holland will be a revelation to many. The old smiths simply revelled in the design of these anchors. Their variety is endless. Initial letters, monograms, ciphers, and other symbolical devices are common, whilst foliage and flowers were tastefully introduced in the best examples. Buildings are often dated by anchors, fashioned into figures denoting the year of their erection. It is recorded that sixty-eight different sets were found in Ypres alone about the middle of the last century. Their design is always appropriate and interesting, the workmanship masterly, and often exquisite. From the 15th to the 18th centuries the use of these tie-rods and wall anchors seems to have been quite general in all kinds of brick buildings in Flanders. One sees them on the world-famed town halls and belfries, as well as on the fronts of the humble street dwellings along the canals. Their use is even continued to the present day in buildings of considerable pretensions, and one finds as a consequence, that the walls are far less liable to get into a cracked and dangerous state than are walls of buildings erected without ties.

Previous to the last century, screwed bolts and screw threads were practically unknown in constructive work, the necessary tackle for cutting the threads being then beyond the outfit of an ordinary smith. Hence we find that where the tightening up had to be done, some arrangement of keys, or cotters, was employed. In wall ties, therefore, the ends were forged with suitable sockets, outside the walls, and through these the wall anchors were passed, all tightening being done either by small keys driven into the sockets (as in Fig. 8), or by a cottered joint in the tie within the building. Even these necessary keys and sockets were made to serve an ornamental purpose in the design.

Without merely copying these fine old Flemish wall anchors, there is still a wide scope for an intelligent and legitimate use of wall ties in modern buildings erected upon unstable foundations. For instance, it is well known that in soft clay soil, especially where it occurs on a hillside, it is necessary to excavate to considerable depths, and to employ heavy concrete foundations for the most common-



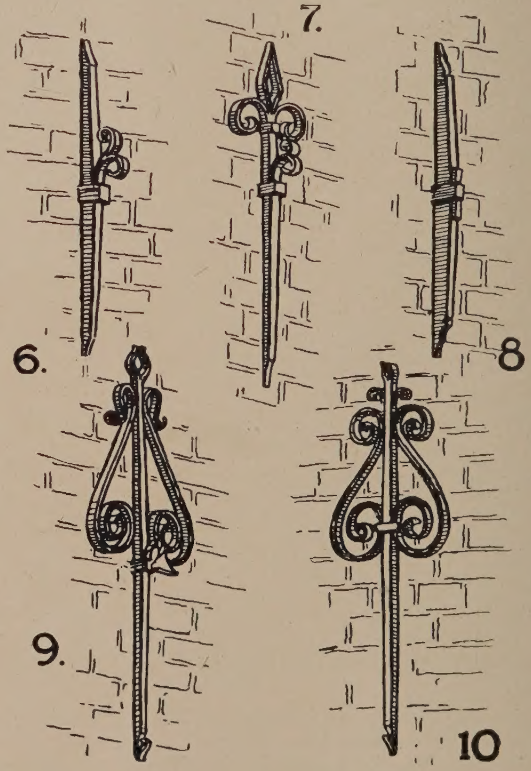
place buildings, if the owner is to be protected against all risk of settlement. For a sum representing but a fraction of the cost of such foundations it would be possible to securely tie the walls at floor levels in such a way that the otherwise expensive foundation work might be considerably curtailed. With good design and the use of modern materials, the wall anchors might be rendered no less decorative than the wrought iron work frequently seen suspending the canopies over entrance doors of suburban villas.

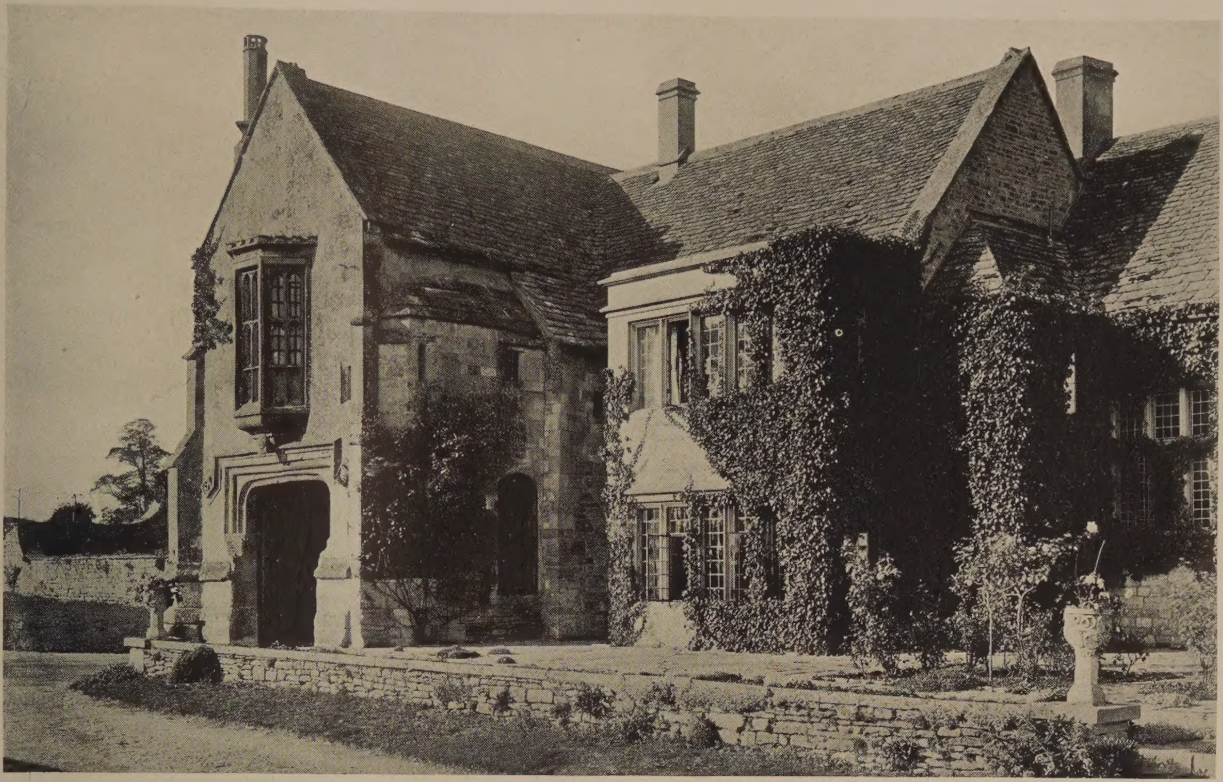
If wall anchors are considered inconsistent with the design of the building, or for other reasons are thought undesirable, it is still possible to attain the same end by a well considered employment of hoop iron bond. The hoop iron, if well embedded in a Portland cement mortar joint, will be effectually protected from rusting, and by bending it over at right angles, all quoins may be reinforced, the cross and party walls being tied to external walls by suitable strips of hoop iron hooked over the running lengths in the latter.

In place of unsightly nuts screwed to the ends of projecting tie-rods, it would be possible to employ ornamental forged heads, any necessary tightening up being done by means of right and left-handed screw shackle joints on the rods within the building. In cases, however, where tie-rods are inserted whilst the building is being erected, very little tightening up is required; in fact, on the Continent the rods are sometimes merely bolted or otherwise secured to the wood framing of the floors, without being passed right through the building.

Were an apology needed for the use of iron ties, ample authority could be found in some of the finest buildings of the Middle Ages, as well as in Renaissance architecture. The iron ties in the choir arcade of Westminster Abbey and at Peterborough Cathedral are well known examples, whilst it has been said that when first erected, Salisbury Cathedral tower was the finest piece of blacksmithing in Europe, bound together as it is at various stages with bands of ironwork, both within and without the masonry. Nor did Sir Christopher Wren consider it unworkmanlike to employ quantities of ironwork in chains, ties, and cramps, it being stated on excellent authority that St. Paul's Cathedral is literally laced together with iron. When it is remembered that many of our finest cathedrals stand on alluvial soil, and that when they were erected the builders had neither the knowledge nor the means at their disposal for putting in adequate foundations on such soils, it will be seen that the judicious use of iron ties gave them a ready and simple means of making their buildings secure.

Finally, as a simple and effective method of dealing with bulged and leaning walls, especially in the case of ancient buildings which it is desired to preserve, as far as possible, in their original state, a few well placed tie-rods, with suitable wall anchors, will often obviate the necessity for demolition and rebuilding. Instead of the modern English plan of employing flat bar iron for these latter, a specially designed forging would be not only more efficient, but more artistically effective. Calculation shows that rolled channels, 2½-in. by 1-in., placed flat against the wall, would be four times as strong as 2-in. by ⅜-in. flat bar, and about ten times as stiff to resist bending; whilst their sectional area, and, therefore, their cost, per foot run, would be merely some 60 per cent. greater. They would also lend themselves to effective ornamental treatment if their flanges were cut off towards the ends, the flat web being split, opened, and fish-tailed, or scrolled, according to the fancy of the designer.





A GOOD EXAMPLE OF OLD ENGLISH STONE MULLIONED CASEMENTS.

III. The Fenestration of Residences

By Jerauld Dahler

THE primary purpose of windows is to afford an inlet for light and sometimes air into the interior of a building. Before the introduction of sheet glass, windows consisted merely of penetrations or holes in the wall of the building exposed at all times to prevailing weather condition. It has been advanced, and logically enough I think, that the term window is derived from the "wind" which found an unobstructed path through these openings and was often a source of discomfort to the inmates. Because of this fact, in the colder climates, such as England and Northern Europe, these early window openings were comparatively small, often being not more than simple vertical slits in the wall. In the more tropical climates, however, such as Italy and Greece, it appears the people lived their lives principally in the open, and window "holes" of a generous size existed. But this was not until after about the fifth century. Before that time there is little or no evidence that windows existed at all. In Pompeiian houses the only openings into the various rooms consisted of a doorway from the open court yard, which served doubly as a passageway for light and air and for the occupants themselves. On the other hand, at the period of the later Roman Republic, window openings are known to have been in common use. Also, there is evidence to show that the Romans understood the art of glazing sash, though they seldom found occasion to employ glass in their windows.

Today the necessity of windows is more than unquestioned—they have come to hold a recognized place of vital importance in our life and in our architecture. It would be difficult indeed to conceive of their elimination from either, for their requirement in our modern manner of living is only equalled by their importance as an element of building design.

On observation we learn that all nature and art are dualities—that nothing exists by itself but rather in pairs. Human beings are composed of masculine and feminine elements, as also is vegetable life. Fire has its complement with water, the sun with the moon, good with evil, joy with sorrow. In painting, the warm colors unite with the cold colors, to produce harmony. So, in architecture, solids are associated inseparably with voids. Walls or columns compose these solids, and windows, or the space existing between column, the voids. They are the two fundamental elements of all building design.

Their relation to each other is, in a sense, equivalent to the colors of the spectrum, or the musical scale upon which and within whose confines the artist "plays" to produce his effects. In fact, architecture, compared to music, easily reveals numerous similarities (but why it should be called music in a state of congealment I can't make out), the most obvious of which, in a general sense, is the usual division of a composition of either into three parts. For instance, a piece of music or an opera begins by introducing certain motifs, leads up constructively to a climax and recedes to an ending much as it began. Likewise a facade of a building, with its windows, etc., as it motifs, leads up, usually by

AN INTERIOR, SHOWING THE ATTRACTIVENESS OF METAL CASEMENTS.

repetition, to its central part or climax, which is embodied in the entrance and sometimes by a surmounting tower and then passes on much as it came. One might go farther and employ this comparison to any artistic composition. Here it is sufficient to show how important the window is as an abstract element in an architectural composition in producing rythm, and what the artist refers to as "values." It is almost entirely by windows that a variation of light and accents of darkness are obtained. In literature it has been authoritatively stated that all the stories ever written can be "boiled" down to be included in seven distinct plots. The variation of good archtiectural masses of composition can, I believe, be reduced to even a less number of distinct forms. Yet, except in a general way, no two buildings are alike. They all have walls and a roof, and the latter vary somewhat, but it is their windows principally which determines their character, by the amount of shadow they produce in the composition, by their form or outline in relation to the whole mass and in relation to each other, and by the detail of their enrichment or ornament.

The windows of buildings, designed for living purposes, are bound by limitations different from those of other kinds of buildings. Perhaps the most important difference is that most buildings, at least modern ones, always require a maximum of light for their interiors. Office buildings, store buildings, school houses and factories all are distinguished by an arbitrariness in this respect. Light is their first and insistent demand. Consequently, the exerior design of these buildings is secondary and must conform to, and be limited by, this necessity.

I might have named another duality in art in the above stated instances, namely, the plan and elevation of a building. While they exist individually the one is absolutely dependent upon and inseparable from the other. It is the function of the window to unit these two in harmony (or discord).

It must be granted that where the size of windows is arbitrary the power of the artist is limited. Fortunately, with residences this is not the case. Built as they usually are on open ground, light is unrestricted and unhampered, as is the opposite case with commercial buildings on crowded streets. And then too, for psychological reasons, it is the nature of man to require more light where he works than where he plays or is at leisure. Consequently, the bug-bear of large windows is not present in domestic architecture. For this, among other reasons, it is one of the few spheres included in the Architect's scope of work that allows a free hand for pure aesthtic endeavor. There are, of course, exceptions to this rule in matter of light quantity for individual tastes, requirements and ignorance demand a certain latitude of restraint. But the rule holds nevertheless. I once was dumfounded to hear a woman tell with a voice of exultant pride, that there were seven large windows in her bedroom, though her house was of but relatively small size. I take her to be an exception, the like of which, if there ever were many, is fast disappearing with the apparent awakening interest in art matters. It was painful enough to visualize the exterior of that home—not to dare think of that room with its overflow of glass. For such a mistake would of necessity affect both the inside and the outside of the structure.

The first requirement of windows is that they should be large enough to amply light the room, under normal conditions, in which they occur, and small enough not to create a glare, as in the case just mentioned. It is more important to accord with the first than to violate the latter rule. For if after all there is too much window in a room the flow of light can be diminished and regulated by means of shades or curtains. But if a window is insufficient in area the case is hopeless for the room will be a permanent abode of cheerlessness. Therefore, it seems to me the most important idea to bear in mind in determining the size of a window in a residence building is not to necessarily keep it small, for small windows are not bound to look better than large ones, but to keep it in proper relation to the amount of wall surface in the room after the question of light quantity has

[A MODERN EXAMPLE SHOWING THE CHARMING EFFECTS OF METAL CASEMENTS.

A CHEERFUL EFFECT AFFORDED BY THE GENEROUS USE OF GROUP CASEMENTS.

been settled. The position of windows in a room (and door also) is a question of primary importance, for the qualities of livableness of a room are determined very greatly by the relation of the openings to the wall surfaces. That is why it is a rule, established by our greatest predecessors, that houses should be designed from the inside, out—from the plan to the elevation. For one is naturally much more closely and intimately associated with the interior than with the exterior of their houses, even though it is the exterior that makes or mars the architect's reputation. It has been found that a good and safe guide for the placing and spacing of windows in a room is to decide on the future location of the various pieces of furniture before the plans reach a finished state, being sure that each will have ample space and be set in as pleasing relation as it is possible to imagine. This is not always possible, especially when the furniture is to be new and has not been selected. But even then, since all pieces are more or less of standard size, a considerable accuracy is possible. A feeling of design is just as necessary here on the inside of the house as in the composition of the front facade. Windows symmetrically located on the wall of a room and of the same size promote a feeling or restfulness and repose. The same is true of doors. Windows placed on axis with doors give the design a considered feeling that is lacking in a hit-or-miss, haphazard arrangement.

Difficulties and problems naturally arise from such merging into one of two elements, the plan and the elevation. It is in adjusting them that the taste and character of the designer asserts itself.

From such thoughts as these it is but a natural step to questions of the different types of house design. These may for present purposes be divided into two classes—the balanced or symmetrical design and the unbalanced or so called "picturesque" design.

Of the former, in its smaller and less pretentious type, I can, it seems to me, point to no examples as regards excellence and fineness of fenestration better than our own old Colonial or Georgian structures. In their simplicity of composition, their dignity and their restraint they present today a worthy example for our emulation. The subtlty of their window proportion is ever a source of inspiration and delight. It is, it seems to me, in the best examples of these houses that we find the nearest perfect co-relation of exterior and interior as regards size and placing of windows. I suggest these first because they are our own native production, though not differing greatly from their contemporary English work. Of other foreign houses we have adopted greatly from the French and the Italian, in their grander type, but little from their design of small houses. In both the French and Italian Renaissance, window design was brought to a high standard of excellence. The French fenestration especially is well worthy of extensive study. As for the Italian, owing to the excessively strong sunlight of that country, their window design is very often not well suited to the requirements of our climate.

The other style of design, the unbalanced or "picturesque," has been adapted by us from early English or Flemish work. The best example of fenestration of this type of design undoubtedly exists in the old English Tudor and Elizabethian work from which both we in America and our present English contemporaries gain "inspiration" for modern work.

In domestic architecture there are two different kinds of windows in general use today—the casement or hinged sash and the double-hung sash.

Of the various styles of old architecture the casement is inseparably associated with the Italian, French and early English work; the double-hung, almost exclusively with English Georgian and our own Colonial work.

The principal advantage gained by the use of double-hung sash is their excellent weather-resisting properties. A well detailed window of this kind is absolutely weatherproof. This can hardly be said of the old casements, for with them such a condition was the exception rather than the rule. It is doubtless this fact that accounts for the introduction of double-hung sash at all. It cannot be claimed

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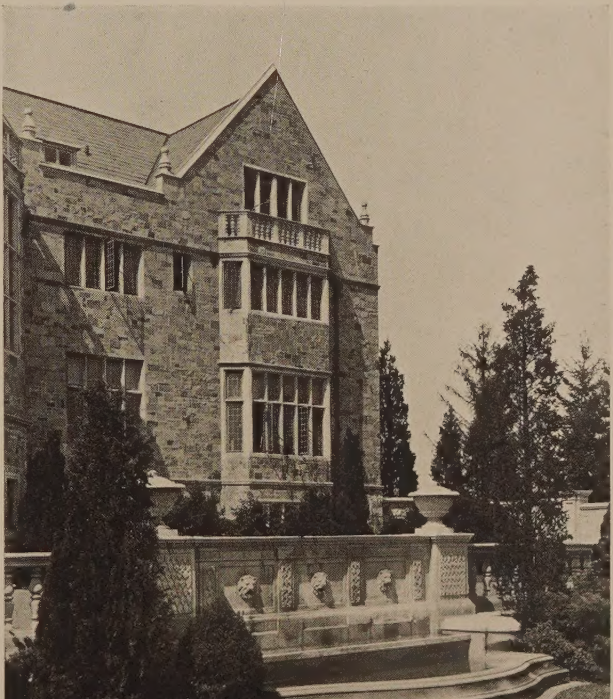
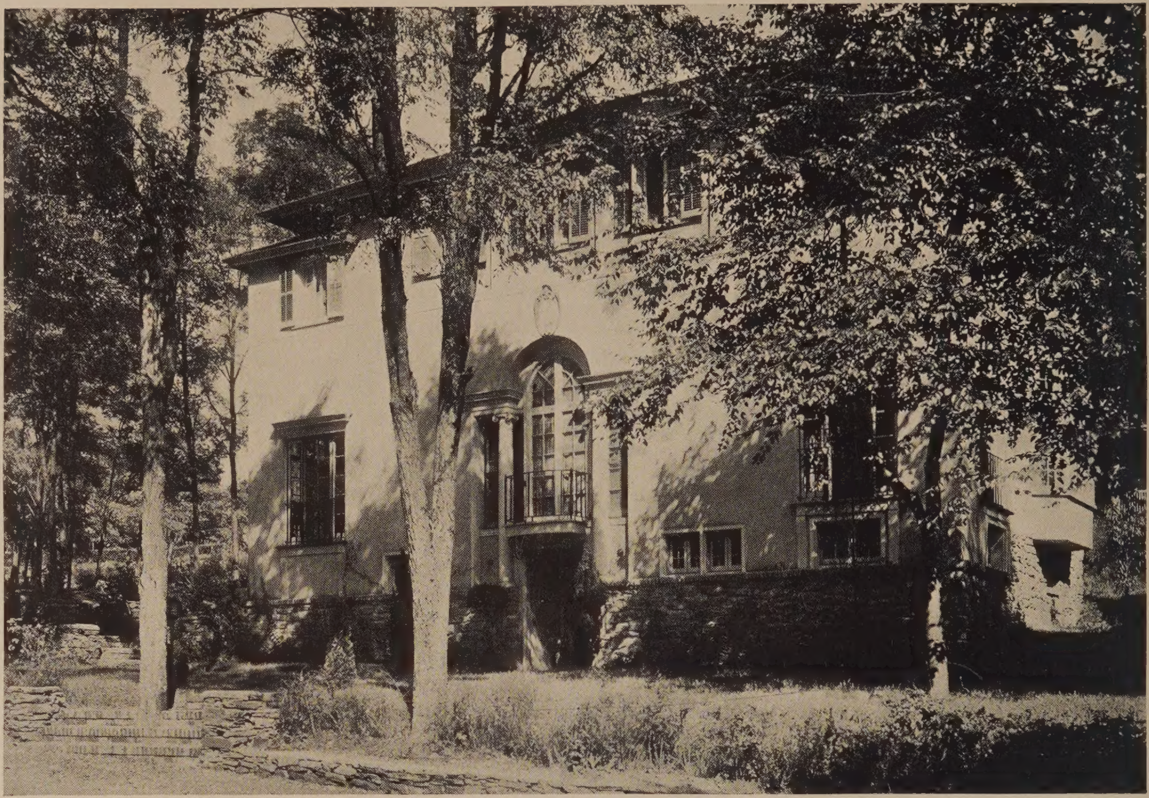
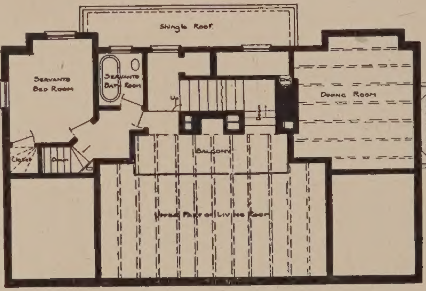
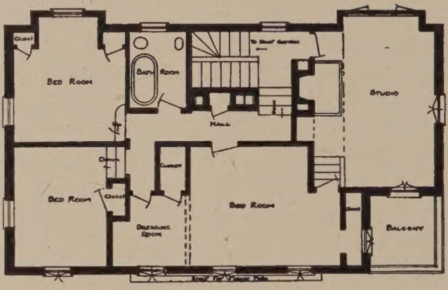
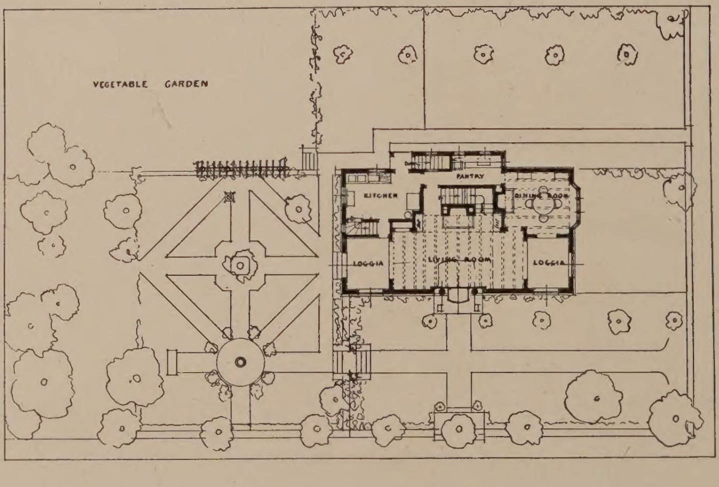


A FINE EXAMPLE SHOWING THE MODERN USE OF METAL CASEMENTS.









HOUSE AND PLANS, JOHN H. PHILLIPS, TUCKAHOE, N. Y. John H. Phillips, Architect.

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they excel the casement in matter of appearance, although I believe that the Seventeenth Century Designers of England by no means failed to appreciate the horizontal lines and classical character of double-hung sash as suitable for their renaissance facades. Because of the severe climate it is but natural that double-hung sash were employed in this country from its earliest Colonial period. Since then they have, until recently, been used almost exclusively by us.

Old casements are of two kinds. In England they were chiefly made of iron. On the Continent, of wood. Casement may be hanged to swing either out or in. For resisting weather, in the form of driving storms, it is by far more practical to have them swing out. They are, however, often made to swing in so that outside blinds may be used or additional casements may be added in winter. Casement windows of wood usually consist of two hinged sash meeting each other at the center. They are made tight against driving storms only by the careful and skillful fitting of their meeting rail and jambs. The early metal casement windows of England usually consisted of a single sash or of groups of single sash divided by stone mullions, both horizontal and vertical. They were by no means proof against severe storm.

Despite the above mentioned practical superiority of double-hung sash, casements, because of characteristic virtues, have never fallen into disuse. The advantage of maximum ventilation offered by them cannot be overlooked. And then too, they possess an irresistable charm due to their simplicity and the spirit of hospitality expressed, when opened, by their outstretched arms.

The recent rebirth of the metal casement is not, then, wholly a surprise. But it should be a source of rejoicing to the architect and the layman alike. Taking the idea of the old English iron casement, inventors have developed it to a high point of perfection until only the old charm remains. Thanks to their energies metal casements may now be had that are absolutely proof against the severest storm. This means that their greatest fault, in times past, has been removed. The house builder with preferences for the English Tudor or Elizabethian work need no longer worry about the security and practicability of the casements which in a great measure give the character and charm to this style of work. In fact, in numerous instances where these old original houses are today in use in England their owners realizing the superiority of the modern metal casement, have had the old windows removed and new ones installed throughout. It can be seen from illustrations shown herewith that these houses have in no sense suffered by the change. Other illustrations show the use of these casements in modern work. Being of metal, these casements are, I think, better suited to houses of masonry construction.

It cannot be expected, or indeed hoped, that this new casement will supplant other styles of windows, but it is good to realize that we have not yet to bid farewell to such an attractive institution in our building art.

For some reason or other it is in our nature to seek to hit upon some definite rules governing our life and our art; a fixed formula of what we should do and what we should not do under any and all circumstances; definite rules of what is ethically good or bad, of what is beautiful and what is not. But I cannot believe that Truth is such an easy goal. It is rather, I think, to be found where these two elements, these dualities of life meet and become one. There are no reasons why the windows of a house should be large or small, long or short, square or circular, except as the specific requirements of design and usage dictate. through the medium of the designer's personality. Art can only be the expression of the individual. It cannot be produced by his laws.

Residence of Mr. John H. Phillips, Architect

Tuckahoe, N. Y.

Familiar to many as typical of the American adaptation of the Italian villa style, is the house of John H. Phillips at Tuckahoe.

The surrounding garden, carefully planned and planted, and the decorative effects of stone walls and brick steps, lend their particular charm to the exterior.

The hillside location permits an arrangement for basement front entrance with a reception room and staircase starting at the lower level and winding around the chimney to the main floor above. This leaves the entire front of the main floor available for the living room, which is a two-storied galleried room with loggia at each end. The loggias are provided with folding casements, the whole length of the room being fifty feet and creating the impression of a lofty spacious room. The fireplace under the balcony with seats at each side has an inviting touch of hospitality and homelike appeal.

On the main floor is the dining room, decorated in elegant simplicity. All the floor beams, 4 in. and 6 in., are actual structural members, plastered between, giving the first floor ceilings a Tyrolese air.

On the mezzanine or gallery floor are the servant's room and bath.

Three rooms and bath are provided on the second floor and a studio connecting with the owner's room and sleeping porch.

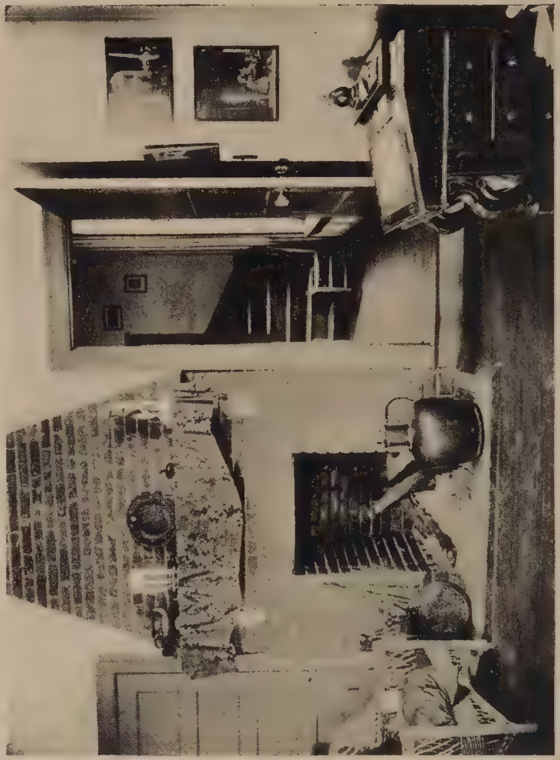
Added to all the other unusual features of convenience and elegance in small space is the luxury of a roof garden at the rear of the house.

Ornamental designs are produced on the stucco of the exterior and on the mantelpiece in the living room. These were designed on the fresh cement and tooled out by Mr. Phillips, himself, before the material had set.

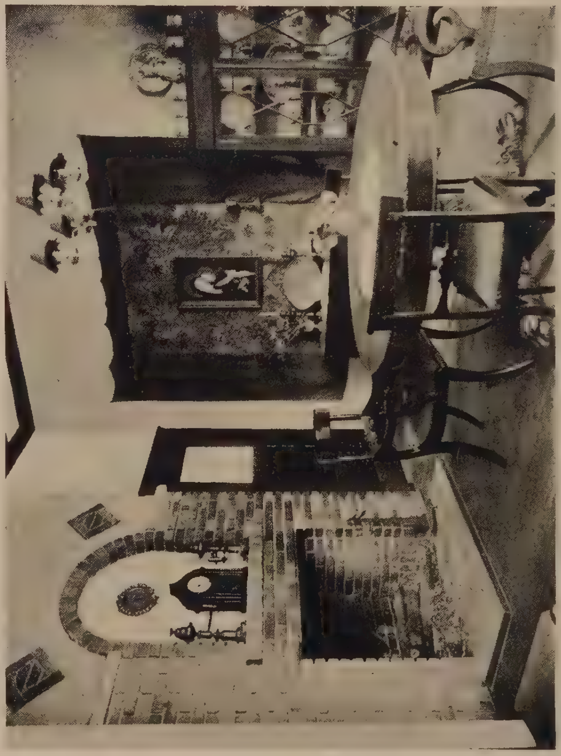
As an indication of what may be done with limitations of space, economy of plan, and executed with simple materials, this house truly presents itself most creditably.

HOUSE, JOHN H. PHILLIPS, TUCKAHOE, N. Y.

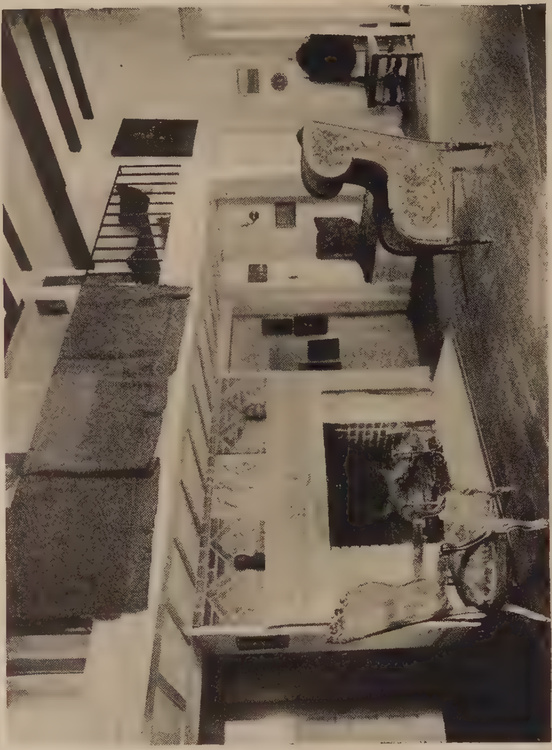
John H. Phillips, Architect.



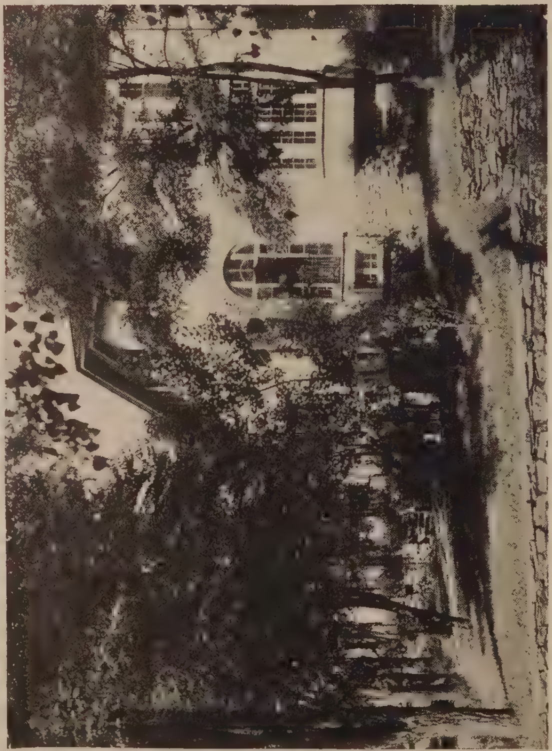
Reception Hall.



Dining Room.



Living Room.



Exterior.

Legal Decisions of Interest to the Architect

These decisions appear monthly and are edited by Mr. John Simpson, the well-known lawyer.

TERMINATION OF CONTRACT—NOTICE—COST OF COMPLETION—CONCLUSIVENESS OF ARCHITECT'S CERTIFICATE.

A WRITTEN contract was entered into to furnish the necessary materials and labor to make certain alterations on a building, the work to be completed within three months, and the contract provided that time was the essence of it. The employment was terminated under an Architect's certificate of failure to prosecute the work as provided in the contract. In an action to foreclose a mechanic's lien it was held that the contractor could not recover on the contract, but only a *quantum meruit.*

The contract made the Architect's certificate conclusive upon the contractor as to the cost of completing the work if the contractor failed to do so. It was therefore held that the contractor could not show the cost of completing the contract by estimates as to the items as against the Architect's certificate.

The contract provided that if the contractor failed to prosecute the work diligently, and such failure was certified by the Architect, who was made the sole arbiter between the parties, the owner might, on three days' notice, provide such labor and materials; and if the Architect should certify that such failure was sufficient ground to terminate the contract, the owner should also be at liberty to terminate it. It was held that three days' notice was not necessary to terminate the contract; the notice was only required in the first instance.—Midtown Contracting Co. *v* Goldsticker, N. Y. Appellate Division, 150 N. Y. Supp. 809.

LIABILITY FOR INJURY TO WORKMAN—WHERE ARCHITECTS ARE AGENTS OF OWNERS AND NOT INDEPENDENT CONTRACTORS.

Action was brought by a bricklayer for injury received while at work on a reinforecd concrete building against the owners and the Architects in general charge of the construction under an oral agreement with the owners. The plaintiff contended that the Architects were independent contractors and that the plaintiff was their servant and not the employee of the owners. The agreed-on compensation of the Architects was 10 per cent. of the actual cost of the building. The original estimated cost was $250,000. No specifications were prepared, though a general plan was agreed on. Changes were made from time to time. These were generally upon recommendation of the Architects and always with the consent of the owners. The Architects entered into many sub-contracts for material and labor. Some of these were in writing. They all purported to be made on behalf of the owners by the Architects as such. In none of them did the Architects assume personal liability. In some of them it was required that the deliveries thereunder should meet with the approval of the Architects. It was held by the Iowa Supreme Court that the Architects were not independent contractors but agents of the owners and were not liable. It did not alter this result, that the recommendations of the Architects were followed in every case throughout the construction of the building, and that at no time did the owners overrule or change such recommendations. It was agreed by the plaintiff that therefore the Architects had the actual control of the method of construction. The question at this point, it was held, was not so much what the owners did in that regard as what they had a right to do. It was undisputed that every item of cost, both for labor and material, was incurred under the eyes of the owners. They kept a daily itemized statement of all expenditures for both labor and material, including the names of the men upon the pay roll, and paid the same upon the approval of the Architects. It was not shown that they were bound to the Architects by any other contract than the contract for compensation at the rate of 10 per cent. They were free to increase or reduce the cost, to follow the original plans or to change them. Their right in this respect was not affected by the fact that no friction or difference of opinion arose between them and their Architects in the prosecution of the work. The plaintiff therefore was held to be the employee of the owners and not of the Architects.—Manton *v* H. L. Stevens & Co. (Iowa) 153 N. W. 87.

ENCROACHMENTS ON STREETS AS AFFECTING MARKET VALUE.

An action was brought to compel the defendant to specifically perform his contract to purchase a seven-story apartment building at Manhattan Avenue and 116th Street, New York City. The defense was that the title was unmarketable because of certain projections of parts of the building which constituted encroachments beyond the building line of both Manhattan Avenue and 116th Street. These consisted of two store show windows, three oriel windows, and a bay window constructed of masonry, all projecting beyond the building line one foot, a portico rising two stories above the street, also projecting beyond the building line one foot, and a stoop projecting beyond the building line four feet.

The plaintiff asserted that the projections were of a kind long sanctioned by municipal ordinance and expressly permitted by the building department; that they were within the boundaries prescribed by the Building Code; that the location of the premises practically precluded the possibility that these projections would ever have to be removed by direction of the municipal authorities; that, even if such action should be taken, the cost of removal and restoration would not exceed $2,000 and would not involve serious rental or fee damage. The referee sustained the plaintiff's contentions, and directed that the defendant perform the contract. The New York Appellate Division reversed the judgment for the plaintiff (154 App. Div. 397, 139 N. Y. Supp. 266) and the Court of Appeals now affirms the Appellate Division's judgment.

For more than a century it has been the practice of the municipal authorities of New York City to permit the erection and maintenance of bay windows, oriel windows, show windows, stoops and porticoes within specified areas. This practice has been sanctioned by various ordinances. Section 73 of the New York Building Code provides that bay windows, oriel windows and show windows on a street

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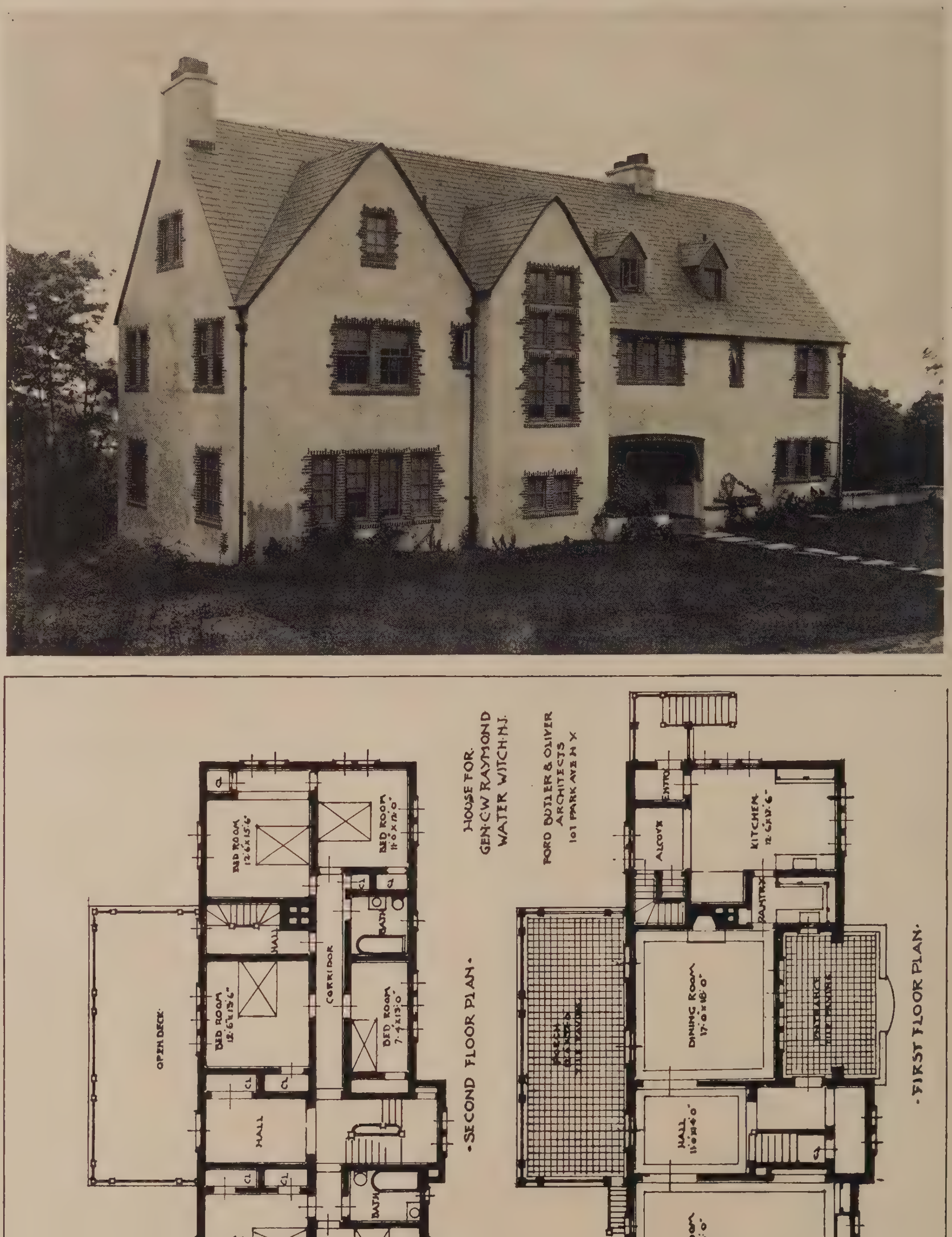

HOUSE AND PLANS, GEN. C. W. RAYMOND, WATER WITCH, N. J. Ford, Butler & Oliver, Architects.

(*Continued from page 277*)

front or side of any building may project not more than one foot beyond the building line and be constructed with the approval of the department of buildings. The Court of Appeals holds, however, that, under section 50 of the New York City Charter, providing that the municipal assembly may not authorize the placing or continuing of any encroachment upon any street except the temporary occupation thereof, and also empowers the Board of Aldermen to prevent encroachments upon the streets and to require their removal by the board officers, the section of the Building Code does not grant an absolute and permanent right to maintain such structures, but the permit is revocable, and, where the proper public officers deem it necessary, they may require their removal.

It was urged, however, that the exercise of this power, which is vested exclusively in the municipal authorities, cannot be anticipated by an intending vendee of premises that may be affected by its execution, and that it can be invoked as an objection to the marketability of a title only after it has been carried into effect. "This," the Court said, "is doubless the view expressed in some of the earlier cases, such as Broadbelt *v.* Loew, 15 App. Div. 343, 44 N. Y. Supp. 159, affirmed by this Court on the opinion below in 162 N. Y. 642, 57 N. E. 1105; but those decisions have been superseded in the more recent cases of Ackerman *v.* True, 175 N. Y. 353, 67 N. E. 629; City of New York *v.* Rice, 198 N. Y. 124, 91 N. E. 283, 28 L. R. A. (N. S.) 375, and others which have followed them. The reason for the difference between the earlier and the later judicial decisions on the subject is to be found in the changed public policy of the municipality. The case of Broadbelt, *supra*, was decided by the Appellate Division in 1897, and by this Court in 1900. From time almost immemorial it had been the municipal policy to acquiesce in the practically universal custom of encroaching upon the streets with various building projections. This policy had its genesis in the infancy of the city, and it had been continued without interruption. Although the population had reached large proportions when the case of Broadbelt was decided, it has since then multiplied in a constantly ascending ratio of rapidity. The growing density of population, and the spread of business into districts that were formerly devoted wholly to residential structures, have created many perplexing problems in connection with the use of the streets as public highways. It is familiar recent history that these changed conditions have led to the compulsory removal of building encroachments from areas, streets, and blocks where they had always before been permitted. When the late Mr. Justice Patterson wrote the opinion in the case of Broadbelt, there was nothing to indicate that there would ever be a radical departure from the early policy of the city with reference to building encroachments on the streets. Since then the change has become an accomplished fact, and its binding force has been recognized in the later judicial decisions."—Acme Realty Co. *v.* Schinasi, New York Court of Appeals, 109 N. E. 577.

RESTRICTIVE COVENANTS—DISTINCTION BETWEEN "BUSINESS" AND "PROFESSION."

The owner of a tract of land subdivided it into lots, and each deed conveying the lots provided that there should not be established or carried on "any kind of * * * business, * * * and that the building or buildings erected on said lots shall be restricted to private dwellings, without a store or rooms underneath." It was held, in a suit for an injunction, that the occupancy of part of the premises by a dressmaking establishment was a violation of the covenant; the dressmaking establishment being a "business" within the prohibition of the covenant.

The location in question was Fifty-second Street, between Fifth and Sixth Avenues, New York City. Other than the defendants' premises, the street is occupied (except in the case of two small places of business on the south side, located on unrestricted lots), by private dwellings, many of which are of very expensive and elaborate character and in which are maintained large domestic establishments. A number of physicians, eminent in their profession, have taken up residence in the street, and the defendant claimed that they in fact conduct business which has consequential effects upon the neighborhood. The law, the Court said, recognizes the distinction between the practice of a profession and the conduct of a mercantile business. One is purely personal, depending upon the skill or art of the individual. The other may consist in ability to organize and manage a shop or exchange, where commodities are bought or sold. Neither the spirit nor the letter of the restrictive covenant intended or expressed prohibition of the practice of a profession, nor could sophistry pervert the real intent and plain meaning of the word "business" to include "profession." The few spots in the unrestricted area mentioned were inconspicuous and did not affect the prevailing conditions; hence the defendant's contention that the character of the neighborhood had changed was without merit.

A person who had acquired title to one of the lots and built his house thereon was held to have a right to enjoin a violation of the covenant by any other grantee, regardless of whether his right under the covenant was of intrinsic or sentimental value, or whether he was damaged by its violation.—Iselin *v.* Flynn, 154 N. Y. Supp. 133.

RECOVERY FOR SERVICES RENDERED AND DAMAGES.

In an action for services as Architects it appeared that the contract therefor stipulated that the plans and specifications were to be accepted by the owner in writing, and that the contractor procured by them was to be satisfactory to the owner. The Architects prepared plans and specifications and found a contractor who would construct it for less than the price agreed upon, who furnished a satisfactory bond. The specifications, though not accepted by the owner in writing, were satisfactory to him and were approved by him. The owner refused to permit the Architects to perform their part of the contract, his only excuse apparently being that he had heard some rumors that if they were permitted to proceed with the work the contract would be violated, and the owner involved in the annoyance and expense of litigation. There was no evidence that the contractor procured was in any sense objectionable. It was held that the Architects were entitled to recover a reasonable compensation for their services rendered and damages arising from a prevention of complete performance.—Rousseau *v.* Cohn (Cal.) 129 Pac. 618.

INTEREST ON OVERDUE ACCOUNT FOR ARCHITECT'S SERVICES.

Under a contract for professional services, the Architect was to receive 5 per cent. of the cost of the work superintended, payable on completion of the work. The Architect certified to the owner the amount of work done on the building, so that the latter knew or could have known the

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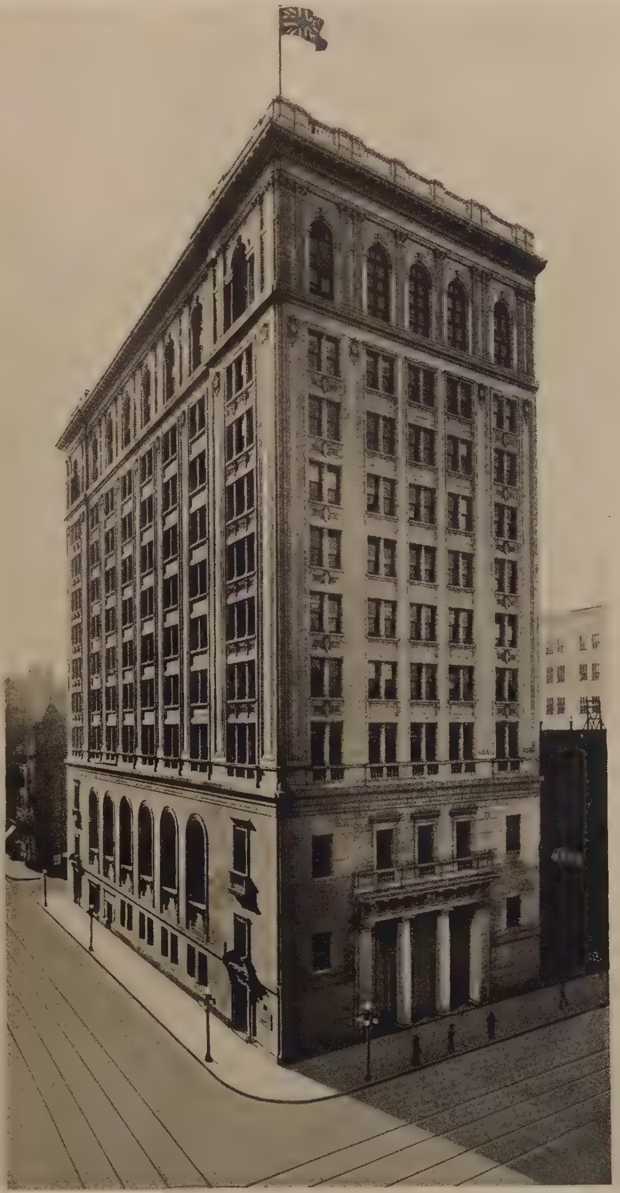
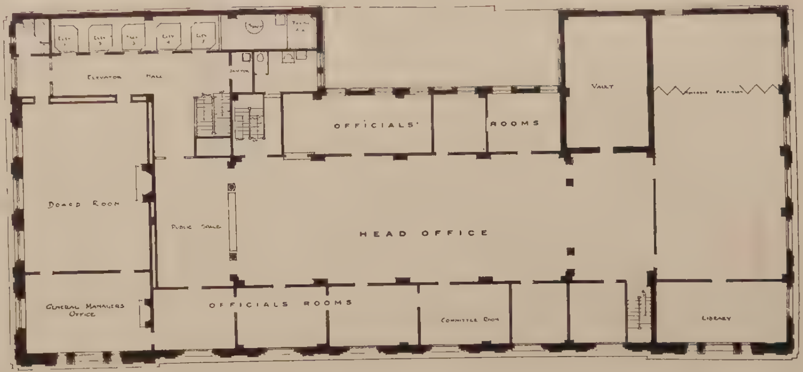
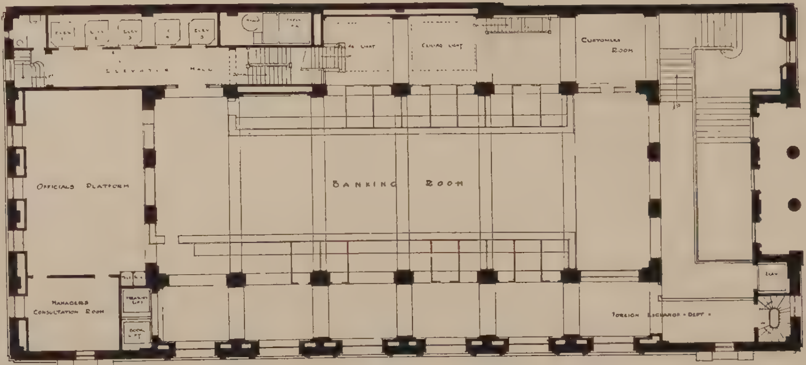
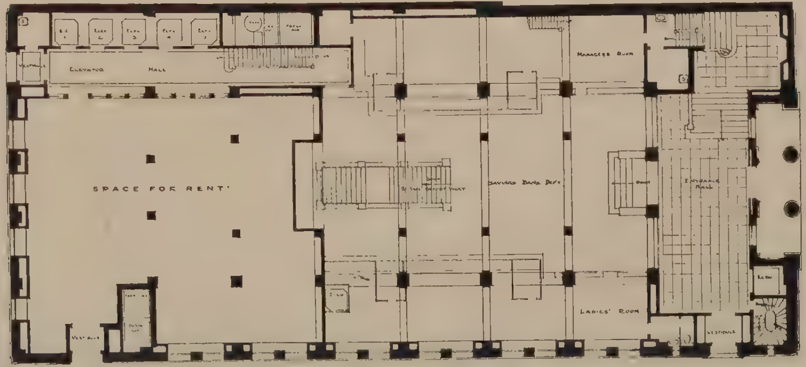




Ninth Floor.



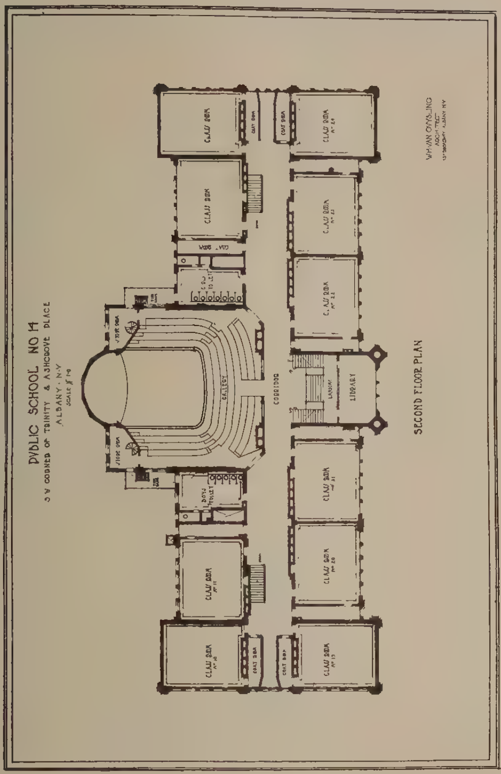
Main Banking Floor.

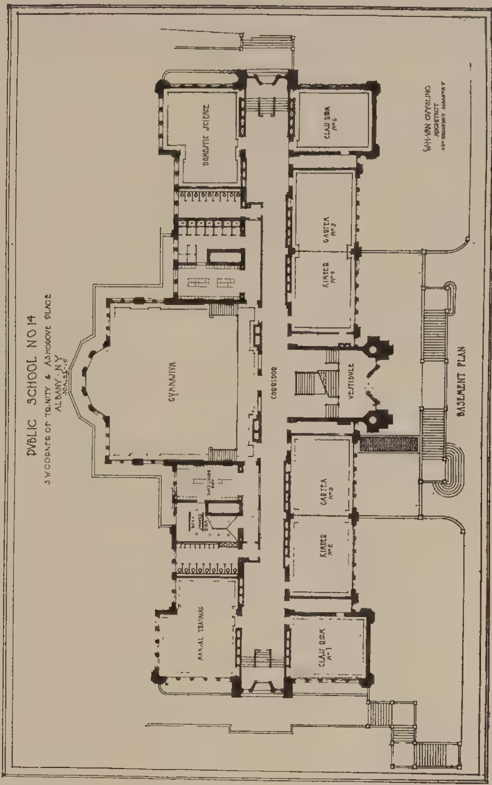


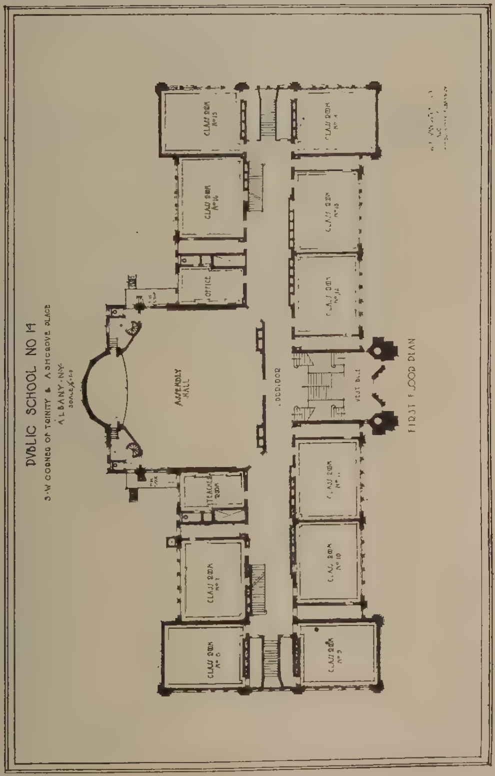
Ground Floor.

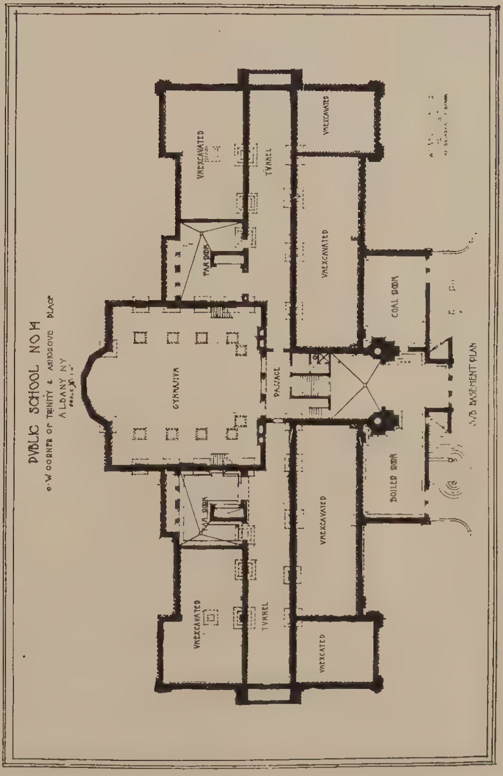
DOMINION BANK BUILDING AND PLANS, TORONTO, CAN.

Darling & Pearson, Architects.



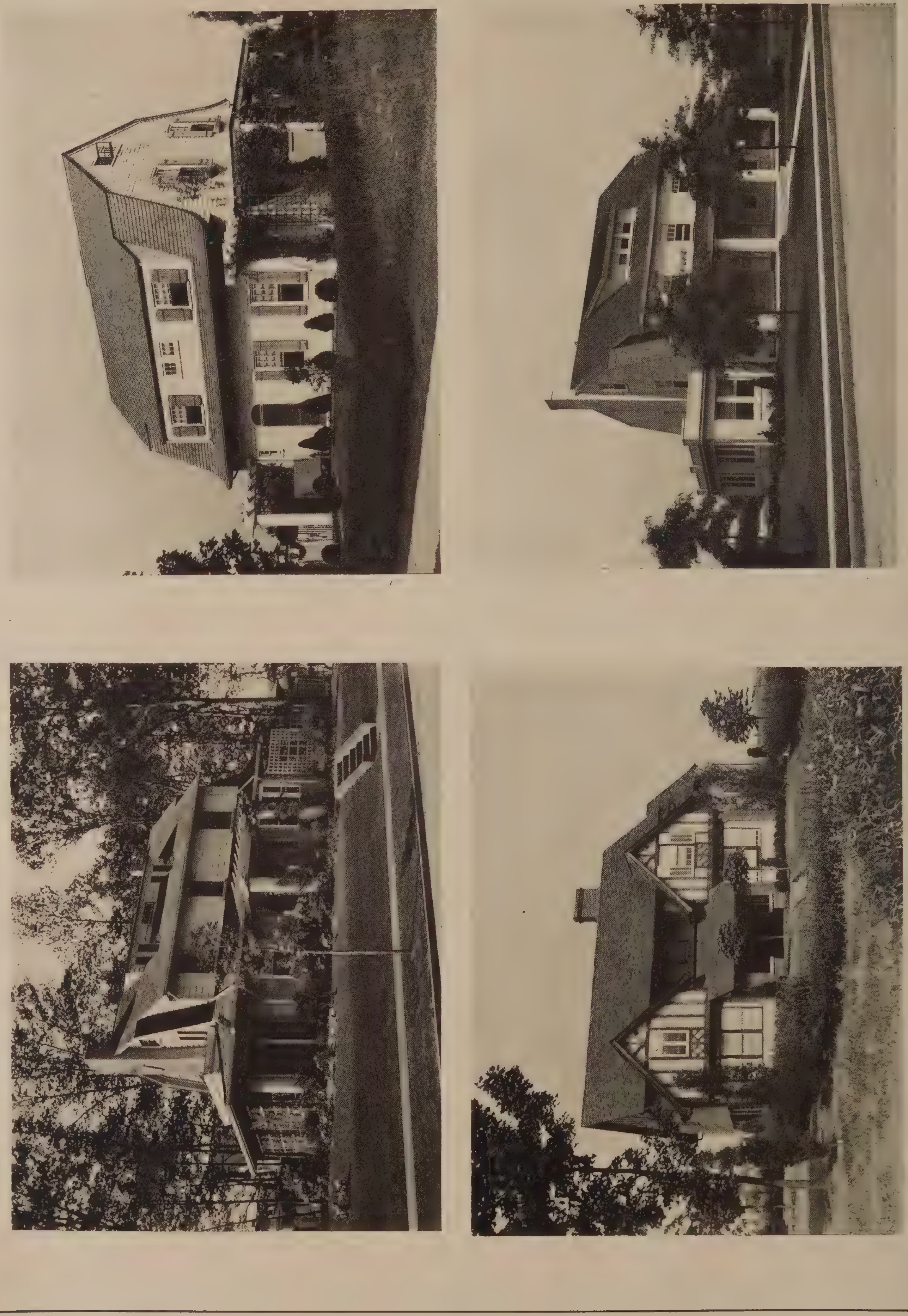






Walter H. Van Guysling, Architect.

PLANS, PUBLIC SCHOOL No. 14, ALBANY, N. Y.



THE ARCHITECT'S SCRAP BOOK—HOUSES ON LONG ISLAND.

(Continued from page 279)

cost of the work at its completion. In an action for such services it was held that the plaintiff was entitled to interest upon recovering under the contract, the account having been liquidated when the work was finished. This was on the principle that a debtor who knows the exact amount he has to pay and when he has to pay it is chargeable with interest if he neglects to pay when due.—Meyer *v.* Buckley (Cal.) 133 Pac. 510.

CONSTRUCTION OF BUILDING CONTRACT.

A contract called for a completed building of reinforced concrete according to a structural design, submitted by the contractor, showing flooring slabs of a thickness required to bear the calculated loads and stresses. In an action on the contractor's bond it was conceded that the slabs were to be covered with an inch of cement topping. The Louisiana Supreme Court held that the topping must be added by the contractor without deduction from the thickness of the slabs.—Equitable Real Estate Co. *v.* National Surety Co., (La.) 63 So. 104.

EXISTENCE OF BUILDING CONTRACT.

A contractor constructed for an owner two houses, each for a fixed sum. When the second house was nearing completion, the owner asked the contractor to figure on erecting a third house, to be transferred to a third person, and told the contractor that he must know what it would cost before he could tell whether he could make a deal with the third person. The contractor usually allowed his carpenter foreman to figure the cost of labor and lumber on jobs. The foreman, knowing of the negotiations, figured on the cost of construction of the third building, and he estimated the cost at $2,140. The foreman told the contractor that he had made his estimate to the owner, and without further negotiations the contractor, during the owner's absence, began work on the third building and completed it according to the plans. The contractor sued the owner for the reasonable value of the labor and material furnished on the job. The Texas Court of Civil Appeals holds that there was a contract binding the contractor to complete it for the specified sum of $2,140.—Crain *v.* Yates (Tex.) 178 S. W. 679.

DEDUCTION OF OMITTED WORK FROM EXTRA WORK.

A building contract stipulated for partial payments as the work progressed, on certificates of the Architect. Claim was made for certain extras. The Architect testified that in making estimates on which payments were made extra work or omitted work was not considered, and that the estimates were approximate only. It was held that the owner was entitled to set off omitted work against the claim for extra work.—Lowry *v.* Law (Cal.) 150 Pac. 660.

DISCHARGE OF SURETY—PRINCIPAL'S LIABILITY FOR PREMIUMS.

A surety company issued its bond to secure the performance of a building contract. The suretyship contract provided for the payment of an annual premium until the surety was discharged of liability, and until "legally" notified of such discharge. The surety was discharged by operation of law by reason of a change in the building contract agreed to by the parties, but without notice to or the consent of the surety. The surety was not "legally" or otherwise notified of the discharge so brought about. Receivers were subsequently appointed for the surety company, who brought an action to recover a premium subsequently falling due. The principals in the bond offered as a defense the discharge of the surety. It was held by the Minnesota Supreme Court that the change in the building contract discharged the surety from further liability. Since the surety had in fact been discharged from liability, and was no longer holden on the bond, there was no consideration for the premiums thereafter to become due, and the discharge might be interposed in defense to the action. The mere failure of the principals in the bond to formally notify the surety of its discharge was not sufficient basis for holding them liable for premiums subsequently accruing.—Poe *v.* Cameron (Minn.) 153 N. W. 129.

WAIVER OF CONDITION AS TO PAYMENTS.—RELEASE OF SURETY.

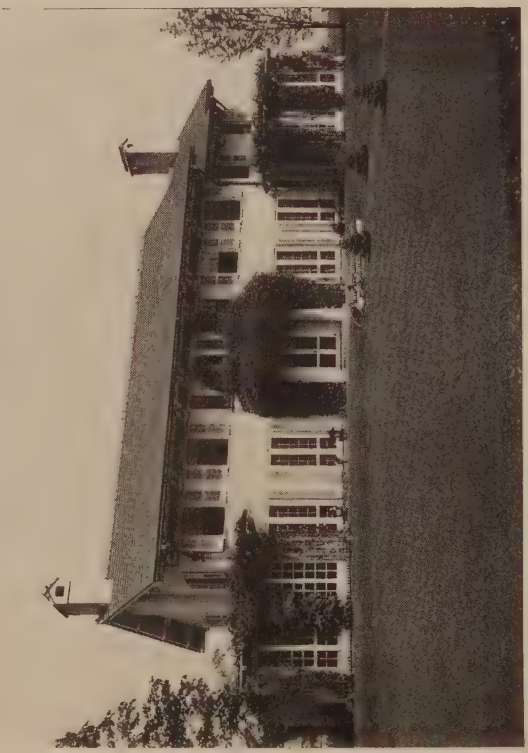
In an action on a bond executed to secure the performance of a building contract which contained a provision that "all payments shall be made upon the certificate of the Architects, to the effect that such payments have become due," it appeared that certain payments were made without obtaining such certificates, but were not made before they became due, and were used in discharge of the contractor's obligations for labor and material that went into the building, and there was no fraud or collusion therein. The Oklahoma Supreme Court holds that, under the terms of the contract in question, the provision was intended for the benefit of the owner, who could waive it without affecting the liability of the surety on the bond.—Northwestern Surety Ins. Co. *v.* Minnetonka Lumber Co. (Okla.), 148 Pac. 1038.

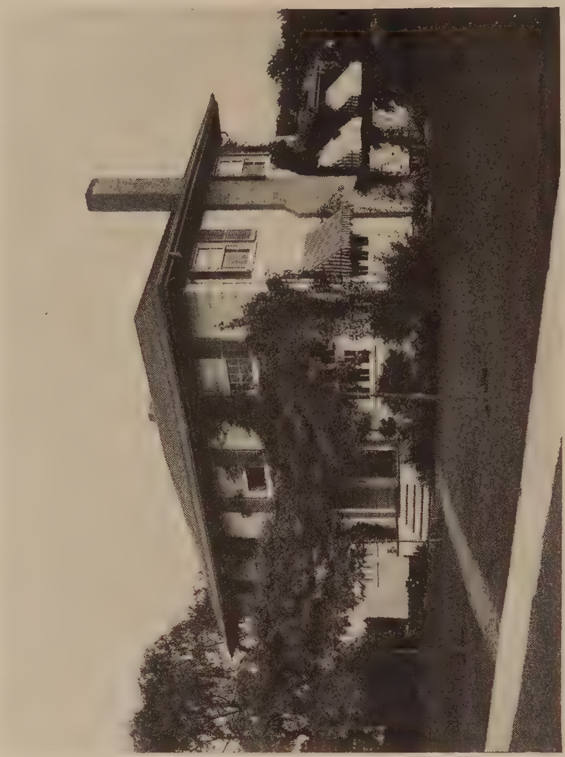
EXTRAS ORDERED ORALLY.

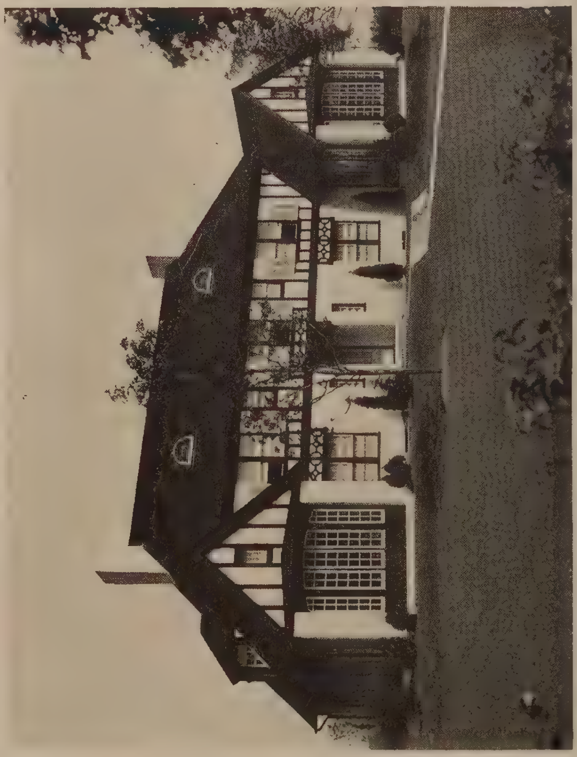
A contractor for the installation of a heating plant in a building demanded compensation for extras orally ordered by the Architect. Stipulations of the general specifications provided that no claim for extras should be considered unless the price was agreed on in writing, and that the Architect's decision in case of any misunderstanding should be final. The contractor claimed that the general specifications were never delivered to him, and his bid was made and the contract was based on the "special heating specifications" only. It was held that, the parties being at variance upon this question, it was properly submitted to the jury, with a direction that if they found that the general specifications were delivered to the contractor prior to the making of the contract, he could not recover. Evidence of other extras arranged for orally by the Architect was held to be admissible to show a waiver of the provision. Judgment for the plaintiff was affirmed.—Wenzel *v.* Kiernj, Michigan Supreme Court, 151 N. W. 641.

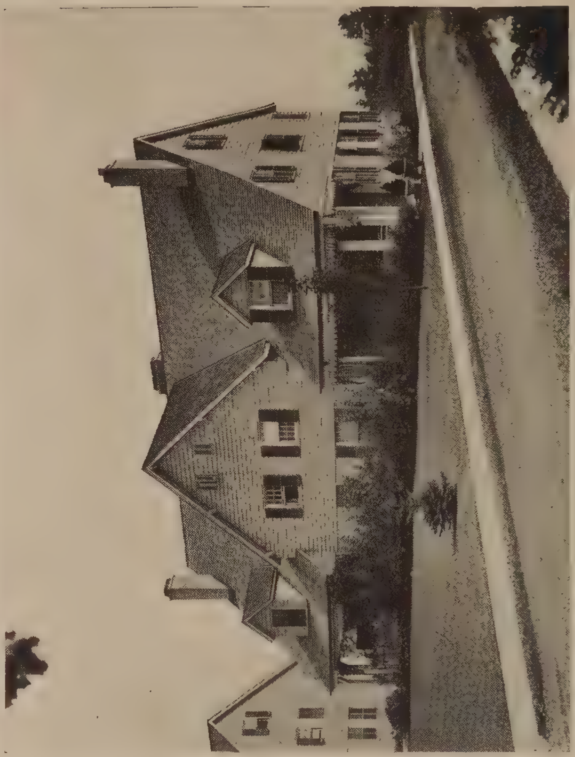
TIME LIMIT.—LIQUIDATED OR FIXED DAMAGE.

A contract for the building of a church provided that, on failure to complete by September 1, 1913, the builder should pay $10 a day, which was to be deducted from the contract price if sufficient funds remained in the hands of the trustees; otherwise the contractor was to pay the sum on demand. It was held that the sum might be treated as liquidated, or fixed, damages, as the actual damages for failing so to complete the building would necessarily be uncertain and difficult to arrive at under the ordinary rules of law.—Walsh *v.* Methodist E. Church, Texas Court of Civil Appeal, 173 S. W. 241.









THE ARCHITECT'S SCRAP BOOK—HOUSES ON LONG ISLAND.

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"ARCHITECTURE" SERIES OF MEASURED DETAILS, NO. 41

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Editorial

Good Business Again—The Sub-Contractor—The Psychology of Design

THE surest indication that business is good or bad is in the number of draughtsmen who are looking for jobs, and that number has very appreciably declined within the past few weeks. Three or four months ago in every office, there were daily and even hourly visits from men who were looking for positions, and had everywhere the same story to tell; that they had been around to all the offices and had found no encouragement in their search for work. Now men are hard to get and it must be for one of two reasons, either they have died, or have got jobs, and while the last year has been a hard one, the mortality among draughtsmen can hardly have affected the visiting rate to so noticeable a degree.

The Architects are really busy again, and while the contractors report that they are not as yet very busy, their activities follow those of the Architects, and do not coincide with them, so that the fact that the builders are not busy does not affect the situation. Another indication that business is improving is the general rise in the prices of materials which may be attributed in some lines to the demand for materials required by war orders, but in others, such as the cement and lumber industries, can hardly have been affected by the war.

We cannot work up many tears for the passing of this year of 1915; it has been a lean year for most of us, but the best thing about it is that it is apparently going to go out in more or less of a blaze of glory. People who were not thinking of building a year ago are now talking about it, and people who a year ago were only thinking are now having plans drawn. There is a well known economic fact that prosperity consists not in the amount of money in the country but in the rapidity of its circulation. A dollar in our pockets is only a dollar, but if we receive and spend the same dollar three times in a year we have had three dollars, and the fact that money is now going into the Architects offices and will soon go into the builders, thence to the mechanics and back to be expended by the mechanics for necessities and luxuries which in turn produce profits, which give more employment to the Architect, means prosperity all around.

WE hope that most of the subscribers to ARCHITECTURE took the trouble to read the very thoughtful letter from one of the manufacturers of building material, which was printed in the September issue, and which took up the question of the unscrupulous middleman, or sub-contractor.

For the benefit of those who did not read the letter, we will briefly rehearse the statement made by its writer. He says, first, that Architects are very careful to specify good general contractors; but that when it comes to exercising their prerogative in regard to sub-contractors, they are willing to accept almost any sort of sub-contractor, looking to the general contractor to secure good workmanship, and considering the financial standing of the sub-contractor not at all. This puts the material men under the necessity either of selling to a man whom they know to be financially irresponsible, or of losing a sale, and in addition the Architect opens the way for trouble for himself or for his client in case the sub-contractor fails to make his payments.

While we feel that the letter itself covered the ground about as fully and in as temperate a fashion as could a letter so explicit in its assertions, we nevertheless feel it incumbent to write a few words expressing our very cordial approval of the stand taken by its writer.

The old doctrine of "caveat emptor" is becoming less and less the accepted doctrine of business men today, and the very great improvement in the whole tone of our business within the past few years, should be reflected back upon this rather obscure phase of building construction. Of course technically an Architect is not responsible for goods sold to sub-contractors, any more than he is responsible for the good faith of the contractor himself, but it seems that as a matter of courtesy to the material men as well as of duty to his clients, he should see that every contractor and sub-contractor upon any job is as sound financially as he is good technically. Architects are very often aware of the process by which the general contractors whom they employ secure bids from poor, cheap sub-contractors and base their estimates upon them, assuming that they can either get approval of these firms or that they can by "sharp" trading beat down the estimates of responsible men to the lower prices. The Architect may not approve of such practice but he has of course no control over the general contractor in this respect, and the writer is by no means sure that it would be desirable for him to interfere with the contractors' conduct of their business in questions of prices even if he had control; but he should investigate the financial reputation of sub-contractors as fully as he does their technical excellence before he passes upon them. Responsible sub-contractors, thus assured that they would not be bidding against a lot of fly-by-night concerns, would be enabled to bid with reasonable assurance of legitimate competition, and would not take contracts at prices where losses could be avoided only by cheapening of quality.

The Architect's main concern is, of course, to secure for his clients proper results at the lowest cost, but it is very delicate question as to how far he should permit the question of cost to one client to influence the whole market in any particular field. Material men are, moreover, the Architects' best friends, and the only ones who are really seeking to assist him in the matter of obtaining quality and every protection which he can reasonably afford should be extended to them. The Architects' associations have no common testing laboratories where they can learn new processes, or ascertain the value of old ones; these they must learn from the material men themselves, and the honesty and fair dealing of most of the larger manufacturing concerns, and a very large proportion of the small ones, is extraordinary. No manufacturer will, of course, attempt to deprecate his own product, but on the other hand few of them attempt to sell their wares by knocking those of their competitors, and if they sometimes overemphasize the good points of their own products, they are as a rule very honest about admitting the weak points. An Architect can almost always depend upon the manufacturer to give him sound and constructive advice as to the material he is using, or the reverse, and there are very few manufacturers who will attempt to have their products used where they know adequate service will not be rendered by them. On the other hand the contractor or the sub-contractor follows the Architect's specifications and if things go wrong puts the fault right up to the Architect, where it properly belongs; but the best of materials in poor hands will not give good results, and while Architects are daily becoming more careful to secure high quality in their general contractors, they are leaving too much in the general contractors' hands the selection of sub-contractors, and especially on the point of the financial responsibility of the sub-contractors.

THE Psychology of Design is a pretty impressive title for a very brief attempt to state some of the reasons why a good Architect is more successful in design, even of factory buildings, than engineers, and is more successful in the planning of structures than the men familiar with the businesses they are intended to house.

There is something in plan beyond mere physical arrangement, that "something" which makes practicability into convenience. It has been a source of interest to the writer in a number of examples to see the way engineers go about the plan of a structure. For example, they determine the width of a passage between the two departments of a building by measuring the widest trucks which will soon have to pass each other and leave a little clearance; they forget the human factor that passages only wide enough look too narrow. The Architect would determine the width of such passage largely by instinct, perhaps instinct developed by training, but primarily by instinct. He might measure the trucks and he might not, but even at the expense of an apparent waste of space he would make the passage large enough so that men meeting each other in it would never lose time in hesitating to see if there were room to pass.

The vital feature of all good planning is to let people entering a structure know instantly where they want to go; in a railroad station, for example, passengers entering by foot, and passengers entering from vehicles should both be enabled to find places they want without asking questions, and it is very curious to see how, in two railroad stations in general appearance alike, how differently this vital test of plan works. There are very many stations where one's first instinct is to look for a uniformed official; other stations where his absence is never noticed or his presence felt; one knows immediately that the ticket office is to the right, the baggage room to the left and the train shed beyond. Often-times it would be impossible to explain why one realizes it, but the fact remains. In another station, apparently of similar character, one finds the baggage room in looking for the ticket office, and then inquires the way from the baggageman. Likewise in private house planning similar though not so difficult problems are encountered. The formal visitor in a large house should know the minute he or she enters that the way to the reception room is to the right and that they are expected to go there; no servants should be necessary to bar the way from the family's living quarters. Likewise, when the guests arise from their chairs to go to the dining room the way should be plain before them, and no guide should be necessary to lead them. In a bank the problems are not dis-similar; nine people out of ten that enter a bank go either to the receiving or paying tellers windows, and the location of these windows in a well-planned structure should need no signs; one should be able to recognize them were they left without designation.

There are certain habits of the mind, certain well worn grooves in which it works that in skillful plans are recognized by the Architect, and which have little to do with purely physical convenience. The longer way may be in many cases more convenient than the shorter one, and is adopted by the Architect not because it is the better way but because it is the way which people expect, and this deference to habit is the essence of good plan.

We have spoken thus far of circulation, but there are other problems into which psychology enters quite as fully; one of the most curious and interesting of these is the desire of every one to have his back up against something when he is not in motion. The keepers of the restaurants recognize this when they introduce all the nooks and alcoves and cubby holes that they can into their big rooms; a screen is enough, but there must be at least a screen. I suppose that nobody ever sat down in the middle of a room and read under the best light without a certain feeling of uneasiness, and nobody ever sat down in such a position at all if they could find some other place where the light was even half as good and where they could have their back protected. Psychologists say that this is because our ancestors survived their contemporaries because our ancestors were the ones who went about carefully looking over their shoulders for wild animals or kindly friends with deadly weapons, but whatever the reason may be we all of us prefer a place to sit where we are not easily reached from behind. This is even more strongly emphasized when we completely surrender ourselves in sleep; we may have trained ourselves to leave our doors and windows open when we go to bed, but we have not trained ourselves to sleep with our heads two feet away from a wall, and in spite of the fact that most of us know that the corners of rooms are the warmest and least well ventilated, we still have a sneaking desire to sleep in a corner. This trait is recognized by the Architect in his planning of such structures as it affects; the cold logic of the engineer or of the factory manager does not perceive its necessity, and the Architect's plan is found to be more comfortable and more attractive for reasons which are not reasons at all, but only instincts or pure psychological things.

Book Reviews

PROJECTIVE ORNAMENT. Claude Bragdon. 1915. The Manas Press, Rochester, N. Y. Cloth. $1.50 net.
Mr. Bragdon is known to a distinct class of readers through his previous lectures and publications which have always carried evidence of a deeper form of expression and the development of a new form of language through the medium of the arts.
Today, we find no originality based on sound fundamentals but rather the style of a building is determined not by necessity, but by the whim of the designer and is made up of borrowings and survivals.

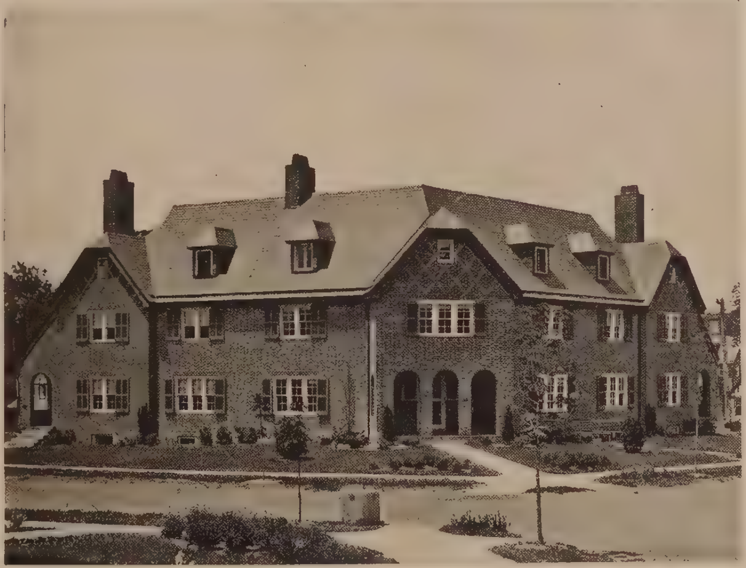
PERSPECTIVE. Ben J. Lubschez, A. I. A. 1915. D Van Nostrand Co., New York. Cloth. $1.50 net.
Second edition, enlarged. The original edition of this little book, published in 1913, has more than justified its making and it is hoped that the issue of 1915 will find even a larger field of usefulness. The book is intended principally for the struggling student who is endeavoring to benefit himself by home study and who can get very little assistance from advanced books too difficult for him to read.

LITHOGRAPHY AND LITHOGRAPHERS. Some chapters in the history of the art by Elizabeth Robins Pennell, together with descriptions and technical explanations of modern artistic methods by Joseph Pennell, President of the Senefelder Club. 1915. Cloth. Illustrated. $4.50 net. The Macmillan Company, New York.
This is a new edition of an earlier publication in 1898, long since out of print and is one of a group known as the Graphic Arts Series. "There are endless series of art books—and endless schools of art, endless lectures on art and art criticism." This series is intended to be a survey of the best work in the past—the work that is admitted to be worth studying—and a definite statement as to the best methods of making drawings, prints and engravings, written in every case by those who have passed their lives in making them.

"MODERN PLUMBING ILLUSTRATED," R. M. Starbuck, 1915. Norman W. Henley Publishing Co., New York. 400 octavo pages, fully illustrated. Price $4.00.
The author of this book, Mr. R. M. Starbuck, is one of the leading authorities on plumbing in the United States. The book represents the highest standard of plumbing work. A very comprehensive work, illustrating and describing the drainage and ventilation of dwellings, apartments and public buildings. The very latest and most approved methods in all branches of sanitary installation are given. The standard book for master plumbers, architects, builders, plumbing inspectors, boards of health, boards of plumbing examiners and for the property owner, as well as the workman and apprentice. It contains fifty-five entirely new and large full pages of illustrations with descriptive text, all of which have been made specially for this work. These plates show all kinds of modern plumbing work. Each plate is accompanied by several pages of text, giving notes and practical suggestions, sizes of pipe, proper measurements for setting up work, etc. Suggestions on estimating plumbing construction are also included.

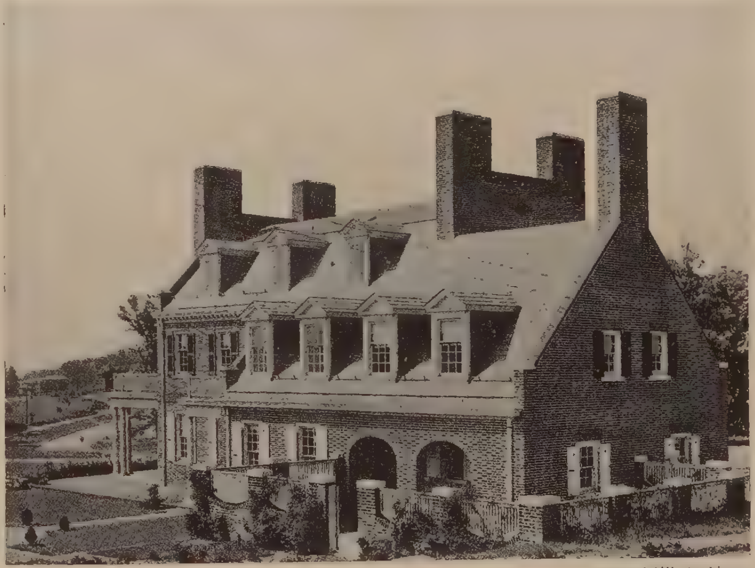
STABILITY OF MASONRY, Ernest H. Sprague, A. M. Inst. C. E. 1915. Scott, Greenwood & Son, London. D. Van Nostrand Co., New York, American Agents. (Pocket size.) 180 Pages, with worked examples, 92 illustrations and three folding plates. Price $1.50 net.
The author has endeavored to present the subject of earth and water pressure on walls and other structures, both from the graphical and mathematical points of view.
Graphical methods by their great adaptability and simplicity have a distinct advantage over calculation in a subject of this nature; and considering the great variations likely to occur from the unavoidable want of precision in the data, the results obtained by graphical methods may be regarded with quite as much confidence as those deduced in accordance with a more scientific analysis. Prominence has therefore been given to graphical methods.
The author has at various times consulted the standard treatises on the subject, but the present work is directly based upon lectures given at University College and at the Westminster Technical Institute, where some of the methods described and now common to the latest textbooks were given before these appeared in England.

The Brickbuilder.



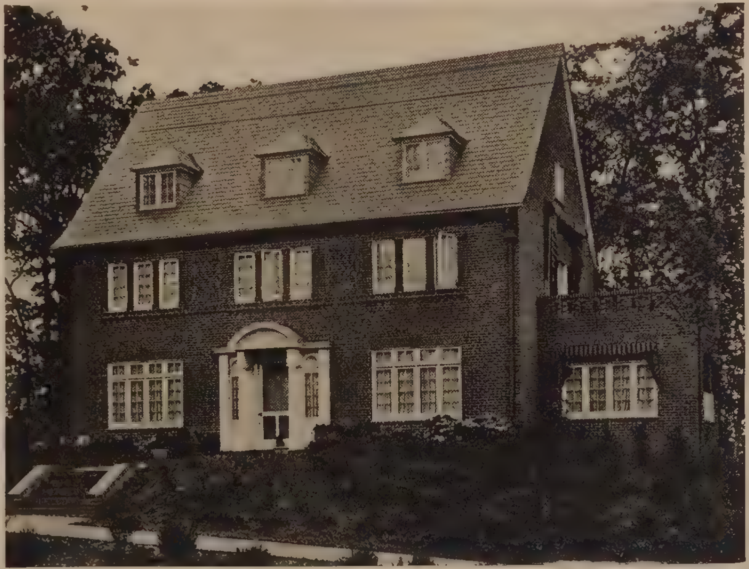
Houses at Guilford, Baltimore, Md. E. L. Palmer, Jr., Architect.

The Brickbuilder.



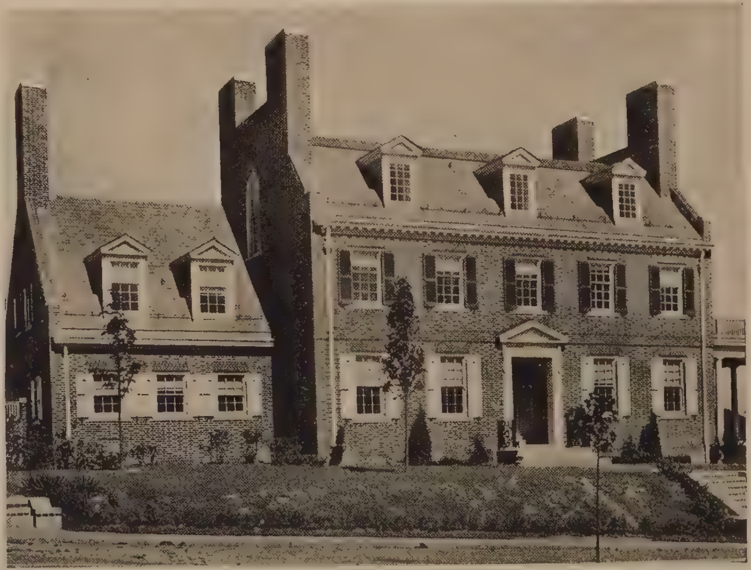
House at Guilford, Baltimore, Md. Howard Sill, Architect.

The Brickbuilder.



House at Guilford, Baltimore, Md. L. H. Fowler, Architect.

The Brickbuilder.



House at Guilford, Baltimore, Md. Howard Sill, Architect.

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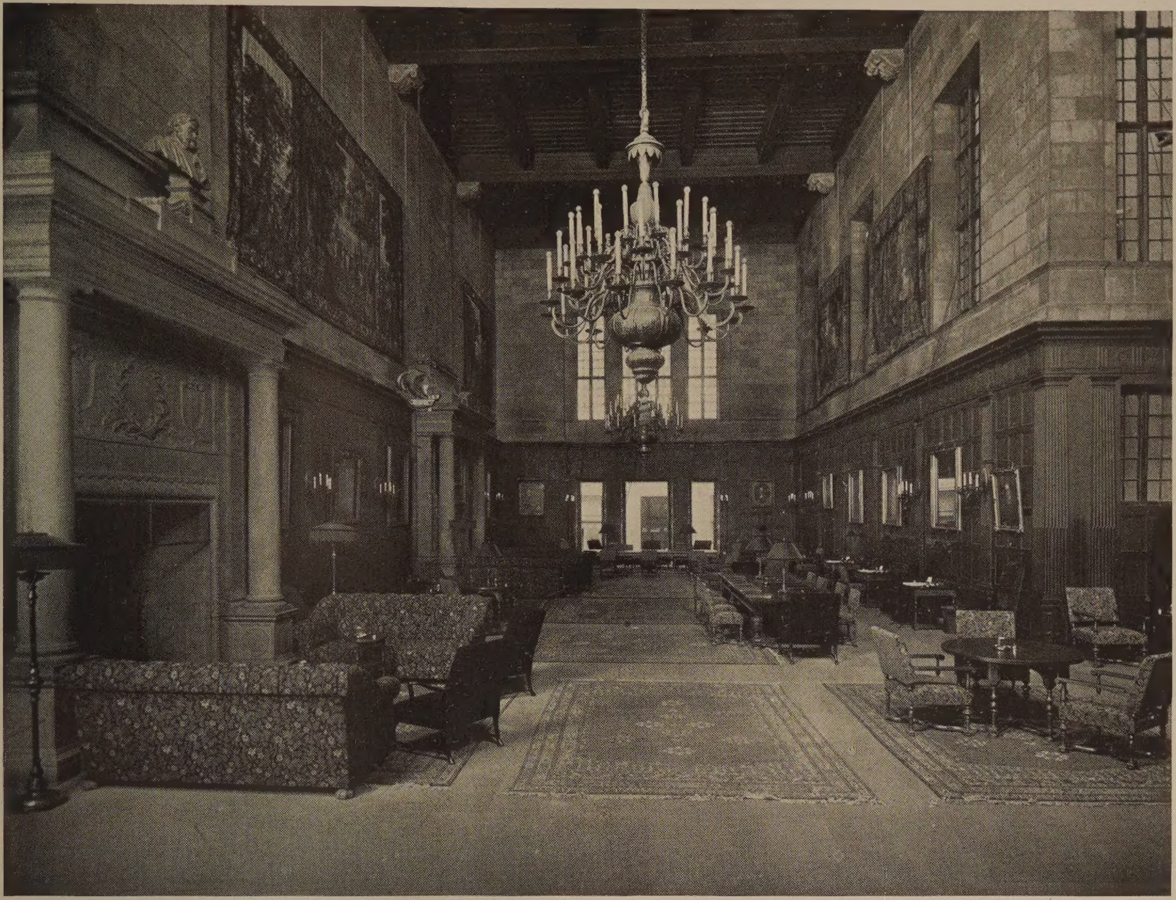

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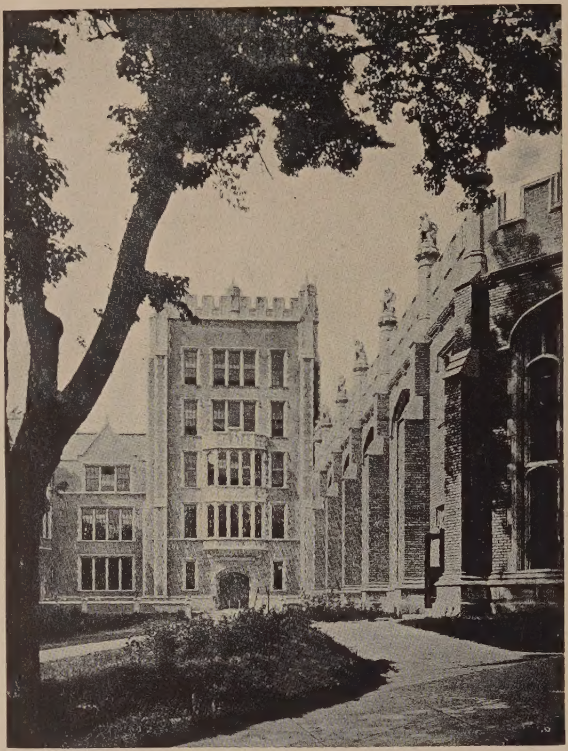
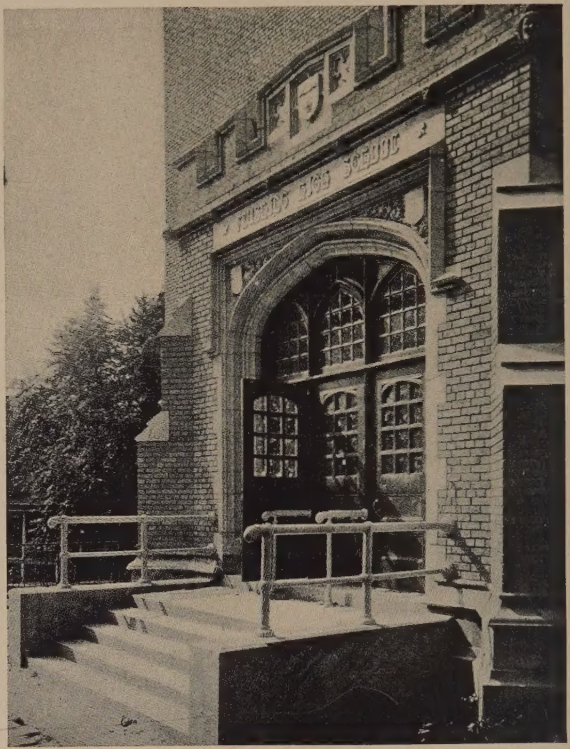


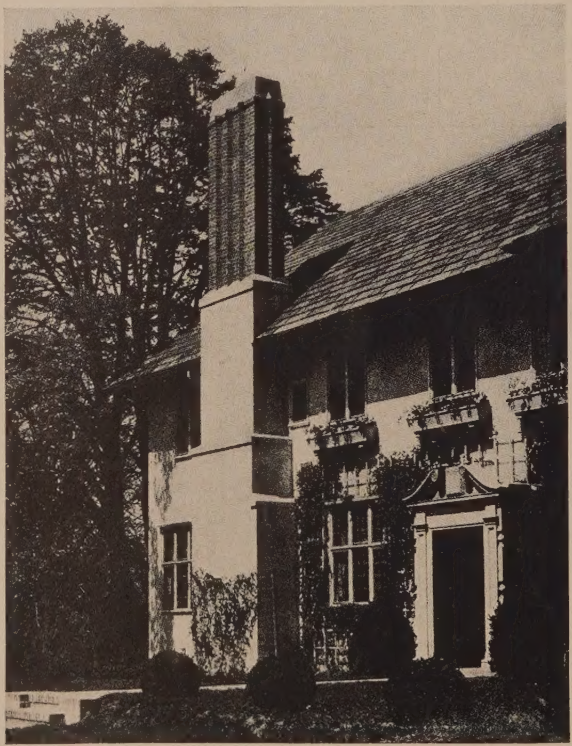
Flushing High School, New York. C. B. J. Snyder, Architect.

American Architect.



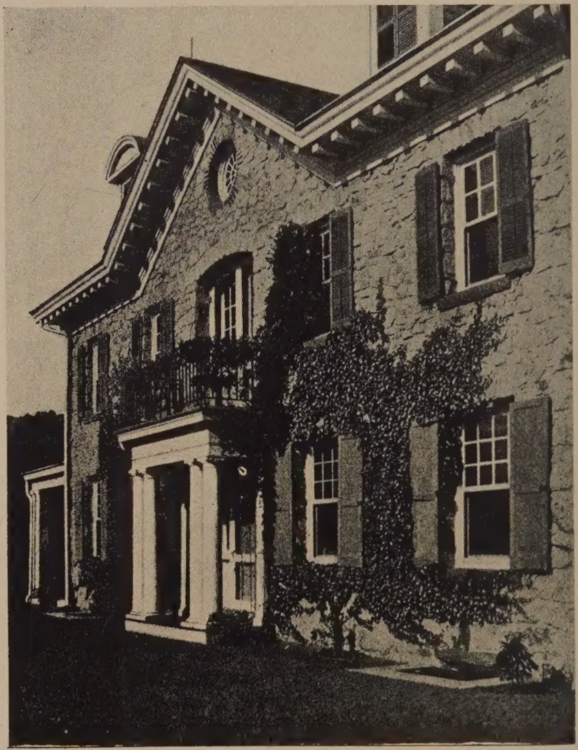
Entrance, Flushing High School, New York. C. B. J. Snyder, Architect.

Architectural Record.

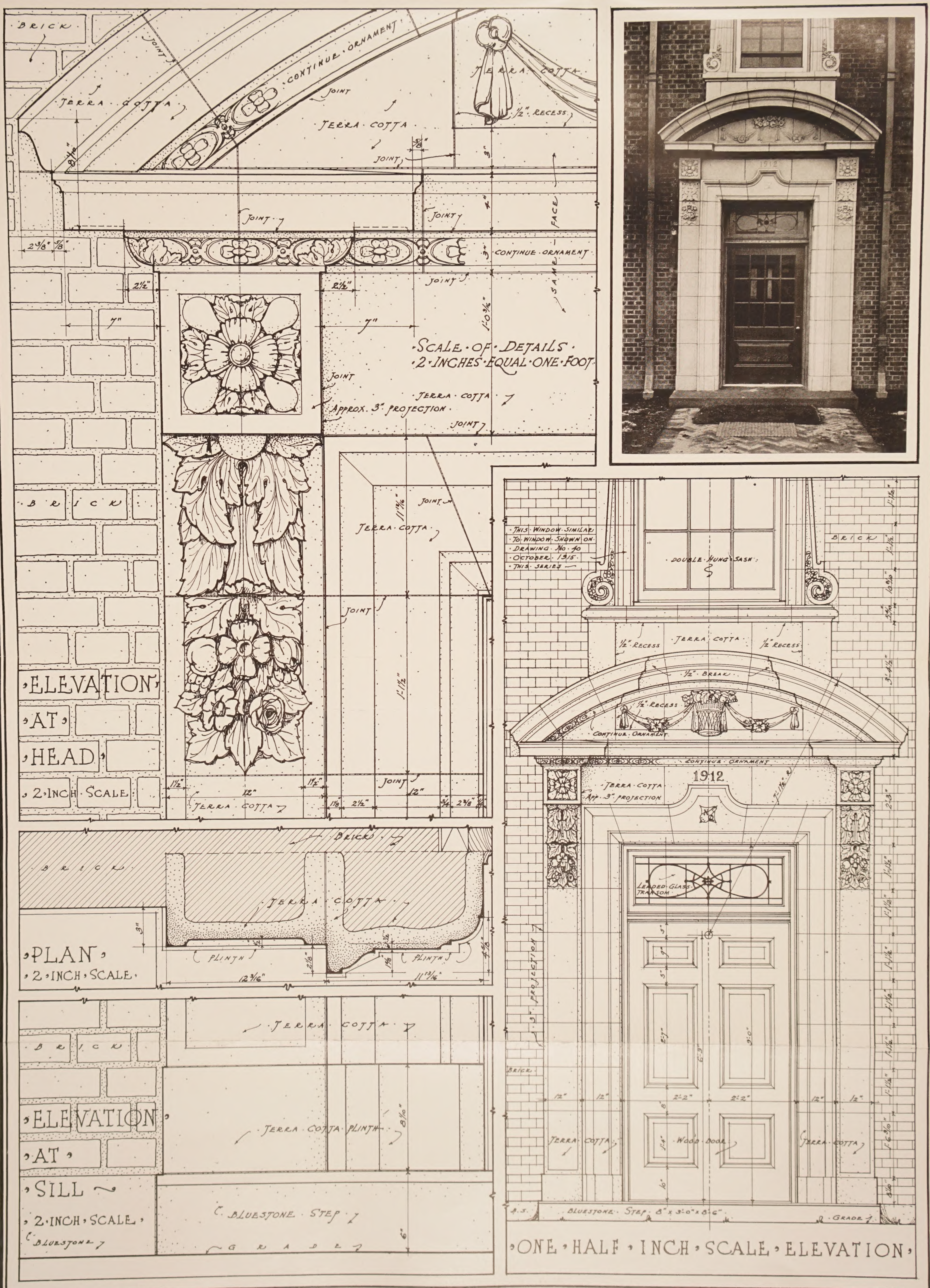


Detail, House, C. Bonynge, So. Orange, N. J.
Davis, McGrath & Kiessling, Architects.

Architectural Record.



Detail, House, Knox Taylor, High Bridge, N. Y.
Wm. Emerson, Architect.



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